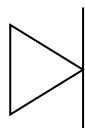


Joint Venture of Orascom Construction, The Arab Contractors and Elsewedy Electric for Power System Projects

Project Health, Safety and Environment Management Plan

Project	:	High Speed Rail (Green Line) - Package (3) – 660 KM (Sokhna - Mattrouh)
Employer	:	The national authority for tunnels - NAT
Employer Representative	:	SYSTRA Group
Contractor	:	JV of Orascom Construction, The Arab Contractors and Elsewedy Electric for Power System Projects

00	25 October 2023	HSE Coordinator	Project HSE Manager	Project Director
Rev	Date	Prepared by	Reviewed by	Approved by

REVISION RECORD SHEET**Note**

- i. Revisions after Rev. 0 are denoted by a vertical line in the left-hand margin against the revised text, with the revision number displayed next to the revision line as shown by the example on the left.

Rev. No.	Date	Description of Revision	Prepared by	Reviewed by	Approved by
00	25 October 2023	Issued for implementation	AT&AM	HK	--

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1.0 Introduction

- This Plan provides HSE guidelines and outlines the health, Safety and Environment management system general principles that will be implemented during the project phases.
- This plan is developed against the project contract agreement, applicable laws and regulations and the contractor HSE management system.
- This plan will be revised and further detailed where and when applicable during the different stages of the project.

1.1 Abbreviations and Definitions

1.1.1	Employer	– The national authority for tunnels - NAT
1.1.2	Consultant	– SYSTRA Group
1.1.3	Contractor	– JV of Orascom Construction, The Arab Contractors and Elsewedy Electric for Power System Projects
1.1.4	HSE	– Health, Safety and Environment
1.1.5	JV	– Joint Venture
1.1.6	MSRA	– Method Statement and Risk Assessment
1.1.7	PTW	– Permit To work
1.1.8	LOTO	– Lockout Tag-out
1.1.9	MSDS	– Material Safety Data Sheet
1.1.10	PPE	– Personal Protective Equipment
1.1.11	ATEX	– Explosive Atmosphere
1.1.12	MEWP	– Mobile Elevating Working Platform
1.1.13	STARRT	– Safety task Analysis and Risk Reduction Talk
1.1.14	TBT	– Tool-Box Talk
1.1.15	KPI	– Key Performance Indicator
1.1.16	PPE	– Personnel Protective Equipment
1.1.17	ISO	– International Organization for Standardization
1.1.18	M ³	– Cubic Meter
1.1.19	ALARP	– As Low as Reasonably Practicable
1.1.20	ANSI	– American National Standards Institute
1.1.21	OSHA	– Occupational Safety and Health Administration
1.1.22	EN	– European Norm
1.1.23	Kn	– kilonewton
1.1.24	Hz	– Hertz
1.1.25	DC	– Direct Current
1.1.26	AC	– Alternating current
1.1.27	V	– Volte
1.1.28	KVA	– Kilo Volt Ampere
1.1.29	Ft	– Feet
1.1.30	M ²	– Square Meter
1.1.31	Kg	– Kilogram
1.1.32	WC	– Water Closet
1.1.33	L	– Liter
1.1.34	LPG	– Liquefied Petroleum Gas
1.1.35	CGC	– Compressed Gas Cylinders
1.1.36	PSIG	– Pounds Per Square Inch Gauge
1.1.37	Cm	– Centimeter
1.1.38	Co2	– Carbon Dioxide
1.1.39	WDB	– Work Distribution Board
1.1.40	SDB	– Secondary Distribution Board

- 1.1.41 RCD – Residual-current device

1.2 References

- 1.2.1 – Project Contract Agreement and specifications
- 1.2.2 – Labor Law no. 12/2003
- 1.2.3 – Resolution 211 of 2003
- 1.2.4 – Resolution No. 134 of 2003
- 1.2.5 – Environmental law no. 09 / 2009
- 1.2.6 – Waste management law no. 202/2020
- 1.2.7 – ISO 45001:2018
- 1.2.8 – ISO 14001:2015
- 1.2.9 – Contractor HSE Management System

1.3 Key Individuals

Project Manager:

- i. Name : _____
- ii. E-mail : _____
- iii. Mobile : _____

Site Manager:

- i. Name : _____
- ii. E-mail : _____
- iii. Mobile : _____

Project HSE Manager:

- i. Name : _____
- ii. E-mail : _____
- iii. Mobile : _____

1.1 Health, Safety and Environment Policy and Objectives

1.1.1 HSE Policies

- The Contractor committed to provide high standards of health, safety and environment to our employees, subcontractors and visitors in addition to protect the surrounding environment and communities. The Contractor strive to prevent injuries, occupational diseases, ill-health and environmental impacts.

1.1.2 HSE Objectives

- a) The Contractor will develop specific programs to establish the principles which are directed to achieve the following HSE objectives:
 - Zero (0) Incidents / Accidents
 - Zero (0) Occupational illnesses
 - Zero (0) Incidents impacting the environment
- b) A set of sub objectives or HSE indicators (Leading and Lagging) for the project will be identified and communicated to all JV parties; these will be reviewed and revised to reflect the various stages of the project.

2.0 Project HSE Management System

2.1 General Principle

All JV internal parties are committed to the HSE policy and principles and to achieve the HSE objectives by identifying and controlling hazards and associated risks using the hierarchy of control detailed below:

- ✓ **Eliminate** the hazard where it is reasonably practical to do so by designing it out or by substituting it with something which is less harmful.
- ✓ **Isolate** the people or the environment from the hazard sources.
- ✓ **Reduce** exposure time, reducing the number of people exposed or reducing the effects of the hazard.
- ✓ **Control** by introducing measures such as method statements, permits to work, locking off, barriers and guards and other management procedures.
- ✓ **Instruct** the people that a hazard exists and detail administrative controls to reduce the likelihood of the exposure.
- ✓ **Protect** the person by utilizing Person Protective Equipment (PPE)

2.2 Compliance to legal and other requirements

- a) The contractor will develop a system which ensures that the related HSE regulations and legislations are clearly defined and considered in all project's activities.
- b) A register of HSE applicable laws and standards will be established and maintained to identify the related legal requirements. This is to monitor the applicable legislation and standards compliance during the work execution. In addition to take appropriate actions to ensure continuous compliance.
- c) Results of legal compliance process shall be communicated to the JV management to provide the required management support toward the legal compliance.
- d) Proper communication channels will be established to ensure receiving continuous updates in the project legislation by the contractor.

2.3 HSE Risk Management

- a) Risk control will be conducted using the hierarchy of control (eliminate, substitute, engineering control, administrative, signage and warning, training, supervision and PPE)
- b) All feasible risks are required to be avoided or mitigated as low as reasonably practicable (ALARP), to ensure health and safety of the contractor operations. Apply the following approach to all project relevant aspects;
 - i. The likelihood of the hazard or the risk concerned occurring
 - ii. The degree of harm that might result from the hazard or the risk
 - iii. Who will be concerned knows, or ought to know, about the hazard or risk and ways of eliminating or minimizing the risk
 - iv. The availability and suitability of ways to eliminate or minimize the risk, and
 - v. After assessing the extent of the risk and the available ways of eliminating or minimizing the risk, the cost associated with available ways of eliminating or minimizing the risk, including whether the cost is grossly disproportionate to the risk.
- c) Any residual (remaining) risk must be clearly identified, recorded and communicated to affected parties so that controls can be appropriately implemented.
- d) A registry of key risks pertaining to the site will be developed and reviewed at least monthly in the HSE meeting to ensure that appropriate controls are implemented and reviewed.
- e) The contractor shall establish and maintain risk assessment records for all activities in accordance with clause (3.0 Method Statement and Risk Assessment).

2.4 Roles and Responsibilities

- The contractor is committed to take a proactive approach to demonstrate the HSE responsibility and commitment regarding the project internal parties. In addition to integrate the HSE requirements into the project work activities. Make into consideration, engaging, directing, supporting personnel to contribute into effectiveness and improvement of the project HSE management system. So, the contractor will ensure that the following HSE roles and responsibility are transferred to its stakeholder.

2.4.1 Project Director

The project director responsibilities are to:

- a) Ensure the implementation of this plan and associated systems.
- b) Ensure that this plan is communicated to all JV parties within the project and that there is a commitment to the HSE objectives and understanding their roles and responsibilities.
- c) Facilitate open and honest communication regarding all HSE matters and actively involve relevant internal and external stakeholders.
- d) Ensure that HSE findings or recommendations are acted upon in a timely manner.
- e) Ensure that the design has included considerations for HSE during the project phases.
- f) Ensure the continual improvement of the project HSE management system in accordance with the changes in the project conditions.
- g) Monitor HSE compliance of persons under their supervision and those working around them and should there be a risk to the safety or health of persons or the environment stop works.
- h) Ensure that works, with an imminent danger to safety of personnel and/or the environment or violated the applicable Laws or the project HSE Plan, are stopped and not recommenced until the hazards have been mitigated.
- i) Ensure that arrangements for the coordination of all JV parties to prevent interface risks are in place.
- j) Allocate sufficient resources for the management of HSE matters and ensure that the subcontractors have sufficient resources to fulfill their duties.
- k) Ensure that the HSE requirements such as risk assessments, method statements, environmental considerations, constructability, etc. are known and complied with.
- l) Ensure that all required approvals from the local authorities and the employer are being held.
- m) Ensure full implementation of the project subcontractor management procedure during all procurement stages (selection, contract formation, site supervision and subcontractor taking over).
- n) Ensure that imbedding of the HSE roles and responsibilities in the JV individual's job description.
- o) Ensure implementation of the project HSE training plan.
- p) Ensure implementation of the project PTW system.

2.4.2 JV HSE Manager

JV HSE Manager's duties are to:

- a) Advise all JV parties on the implementation of the HSE procedures and assist where necessary.
- b) Ensure and control the reviews of HSE plans/procedures submitted by the subcontractors performing works on the project.
- c) Coordinate the HSE measures taken or to be taken by the other JV parties working in succession or currently on the work sites.
- d) Ensure compliance with the decisions taken on HSE issues at the various meetings and inspections, in particular those taken at the regular HSE meetings and during joint inspections.
- e) Establish and maintain a professional relationship with the other parties in the project, particularly their HSE personnel, so as to ensure that they are trained as necessary to fulfil the management requirements of the project.
- f) Establish a system of reviews that measures the effectiveness of the HSE systems and procedures and ensure that the requirements are being effectively communicated throughout the workforce.
- g) Ensure that works, with an imminent danger to safety of personnel and/or the environment or violated the applicable Laws or the agreed HSE plan, are stopped and not recommenced until the hazards have been mitigated.

- h) Implement the incident reporting and investigation systems.
- i) Ensure the training of personnel in HSE matters.
- j) Develop the HSE awareness of all personnel on the site and ensure their participation in all aspects.
- k) Compile and report HSE statistics to the JV management and employer representatives.
- l) Notify to and liaise with the HSE relevant local authorities.
- m) Conduct an inspections and audits at the site regularly and report the findings to the site management.
- n) Approve the qualifications of the subcontractor HSE key personnel.

2.4.3 Sub-contractor Site Manager

The Sub-contractor site manager's duties are to:

- a) Ensure the implementation of the project HSE plan and associated systems on the site.
- b) Ensure that this plan is communicated to the site management and in turn to all parties under its control and that there is a commitment to its objectives and understanding as to their roles and responsibilities.
- c) Ensure that subcontractors carrying out works on site are competent and have made adequate provision for HSE.
- d) Ensure that works, with an imminent danger to safety of personnel and/or the environment or violated applicable laws or the agreed HSE plan, are stopped and not recommenced until the hazards have been mitigated.
- e) Ensure only authorized personnel are allowed on site.
- f) Ensure effective coordination and cooperation between the contractor, subcontractor and disciplines to eliminate interface problems as far as possible.
- g) Ensure that all adequate welfare arrangements are in place for site personnel, including sanitation, office and changing facilities, mess facilities, first aid, etc.
- h) Arrange for discussing and addressing HSE matters with people working on Site.
- i) Provide appropriate arrangements for the communication between the parties on Site for HSE.
- j) Ensure the HSE training carried out.
- k) Monitor HSE performance and ensure actions are taken to reward good performance or address poor performance.
- l) Ensure that method statements and risk assessments are reviewed and adequately address the risks associated with the works
- m) Ensure that measures are in place to control security on site.
- n) Ensure that other critical aspects of the work such as operations that may impact on utilities such as power lines, underground services, roads, etc. or any complex tasks that are identified as requiring detailed method statements and risk assessments are properly dealt with.
- o) Ensure that waste is managed in accordance with applicable laws and in an environmentally responsible matter.
- p) Ensure that no commissioning works are undertaken on a system until the Erection Clearance Certificate is issued under the agreed procedure.
- q) Ensure provision of sufficient qualified persons and that sufficient equipment are available for the commissioning process.
- r) Ensure that adequately trained persons, equipment and procedures are in place to respond to foreseeable emergency situations.
- s) Directly coordinate with the JV HSE manager in order to implement the required HSE control measures.

2.4.4 Sub-contractor Engineers

The Sub-contractor engineers' responsibilities are to:

- a) Establishing method statements and risk assessments to ensure that works are planned effectively and activities hazards are minimized.
- b) Inspecting the work areas to ensure that works are being conducted as per the risk assessment and method statement.
- c) Ensure the required construction PTW's are valid and those permit conditions are met.
- d) Facilitate and/or monitor morning Toolbox meetings.
- e) Participate in Site inspections.
- f) Ensuring that all parties under their supervision are conforming to the agreed HSE plan and other procedures.
- g) Ensure that works, with an imminent danger to safety of personnel and/or the environment or violated the applicable laws or the agreed HSE plan, are stopped and not recommenced until the hazards have been mitigated.
- h) Monitor the behavior of the people and provide coaching to change the attitude and behavior positively towards working safely and instils "think before acting" and "value of human life and the environment".
- i) Coaching supervisors to improve their knowledge of HSE.
- j) Establishing and maintaining a motivational environment that includes positive recognition as well as enforcement.
- k) Participate in incident investigations as required and ensure close out of open points.
- l) Provide feedback on any deficiencies in HSE knowledge or skills to HSE management
- m) Not to allow any works on a system under commissioning or in an Area under Commissioning without a valid PTW.

2.4.5JV individuals HSE Responsibilities.

NOTE: these general responsibilities apply to all JV individuals in the site in addition to the responsibilities defined above.

- a) Comply with any and all HSE instructions given.
- b) Refuse to perform works which they believe are unsafe or use any unsafe equipment and inform line management immediately thereof.
- c) Be fully aware of the MSRA and perform works as described in this document
- d) Participate in trainings, tool box talks and safety meetings.
- e) Report any unsafe conditions and/or act to their supervisor.
- f) Report any injury immediately to a first aider and their supervisor.
- g) Report any incident immediately to their supervisor.
- h) Comply with the site PPE requirements and those PPE requirements defined in the relevant MSRA.
- i) Approach any person performing an unsafe act and address them ensuring that they do not continue.
- j) Never modify or damage any safety devices, equipment and/or welfare facilities – accidental damage must be reported to supervisors.
- k) Perform no works without being nominated in the permit to work and having participated in the toolbox talk.

2.5 Training and Competency

2.5.1Competency

- a) Competency being a combination of formal learning such as gaining qualifications by formal teaching/study/examination methods, formal training, on-job training, coaching, and experience.
- b) Employees shall not be permitted to perform any work unless they are being qualified and adequately trained in performing this work safely (ex; electricians, welders, grinders, fitters, painters, etc..) in accordance with the occupational health and safety regulations. It is mandatory that all new employees

shall be instructed and trained in the safety regulations and guidelines (Safety Induction) prior to starting their work.

2.5.2 Specific HSE Training

- a) The training needs of the project will be at minimum a site induction and as required specific work related HSE topics determined by contractor and applicable law in accordance with the project progress.
- b) The contractor will notify employees of the hazards they might be exposed to in different worksites and instruct them as to the most appropriate ways for their safety. The contractor will instruct the employees on how to use the necessary personal protective equipment and appliance.
- c) Employees required to handle toxic, harmful and flammable materials shall be provided with the necessary information on safe handling and use of these materials prior to work.
- d) All personnel who are responsible for rescue of others' life shall be instructed in the appropriate procedures for this work and they shall be fully aware of the locations of rescue equipment and appliances and how to use them appropriately.
- e) Employees who are responsible for receiving and sending communication signals shall be instructed in the simplest and most successful recognized system to enable them to use it efficiently.
- f) Employees responsible for firefighting shall be capable of carrying out this work and fully aware of the locations of all necessary firefighting agents and equipment.
- g) All employees in the worksite shall be instructed and trained in how to use their personal protective equipment and firefighting equipment in case of any emergency occurrence in the project.
- h) Employees shall not be permitted to use or operate any machinery or heavy equipment unless he is qualified, not younger than 18 years old, medically fit and possess a valid driving license issued in Arab Republic of Egypt.
- i) The legal HSE trainings will be conducted by approved authorities, in addition to the internal training conducted by HSE representative according to the project HSE training matrix.

2.5.3 HSE Training Matrix

- a) The contractor will develop a specific training matrix which had been customized to cover all project manpower in accordance with the work activities and associated hazards.
- b) Review of the effectiveness of the training will be conducted formally and informally e.g. while conducting site inspections individuals will be questioned (informal) and during review of leading and lagging indicators training effectiveness will be assessed (formally).
- c) During incident investigations the effectiveness of training will be reviewed in light of investigation findings and programs amended where necessary.

2.6 Communication, Participation and Consultation

2.6.1 General Guidance

- a) It applies to all project internal & external participation, consultation and communication concerning the project HSE management system and objectives.
- b) Enhance management decisions through gathering a wider source of ideas about applied working practices and systems.
- c) Enhance the employees' commitment to the project HSE plan through a better understanding of all HSE aspects which could affect their social work environment, and employee ownership of the outcome of the consultation.
- d) To increase opportunities for learning through sharing of information, concepts and ideas.

2.6.2 HSE Meeting

- a) The Contractor and subcontractor's management and its employees are obliged to attend the weekly meeting which will be initiated by the JV HSE manager.

- b) This meeting will review the weekly performance of the contractor and subcontractors.
- c) The meeting minutes shall be recorded and the corrective action plan shall be followed by the JV HSE manager.
- d) The HSE manager shall report the action plan status to the JV director to take appropriate and necessary action if required.
- e) In-case of failure to fulfill the agreed action during the meetings the works will be suspended until rectification of non-conformities.

2.6.3 Employer Meetings

- a) The contractor shall attend the meetings which will be required by the employer representative.
- b) The contractor shall report the HSE performance to the employer representative before the meetings and as per their request.

2.6.4 Internal Involvement and Risk Communication

- a) Before commencing any job, a formal STARRT talks shall be conducted by the job supervisor to communicate the residual risks and the required control measures.
- b) All employees shall report any hazardous situations via the HSE observation card. HSE staff will collect these cards and discuss the corrective actions with the observer.
- c) The employee will follow up the corrective actions with the concerned parties and report the status to the HSE staff.

2.7 Incident and Accident Prevention

- All accidents are caused and consequently can be avoided: if we eliminate the causes, we will eliminate the accident;
- No activity shall be performed if it cannot be carried out without minimizing its risks;
- No person is obliged to place themselves at risk of harm and retains the right to withdraw from any situation without prejudice on the grounds of potential risk of harm.
- All managers/supervisors shall be responsible for the actions and the performance of the people under their supervision.
- Hazards and risks will be identified at the earliest possible stage, including during design and appropriate controls to reduce the risks to as low as reasonably practicable levels will be implemented.
- Each person who takes part in the project shall not, either by an act or omission, create a situation that has the potential to cause harm to others.
- Each person who takes part in the project has a duty of care to report any situation that has the potential to cause harm and to take all reasonable steps to prevent that situation from causing harm to others.
- Each person who takes part in the project shall be committed to the project HSE objectives.
- This HSE stand will be revised by management periodically over the duration of the Project

2.7.1 Statistics Reporting

- a) The contractor shall submit a monthly HSE statistical report to the employer representative during the monthly progress meeting for its own and its subcontractors' scope of works.
- b) The contractor (include the subcontractors KPIs) shall fill HSE KPIs form and submit it to employer representative on the 5th day of each month. The following information shall be provided:
 - The total number of personnel (workers and management).
 - The total number of man-hours worked.
 - The total number of tool-box-talks performed.
 - The total number of specific HSE trainings performed.
 - The total number of incidents and its frequency rates.
 - The total number of the hazardous situation reports.

- The total quantity waste removed from the Contractor's work areas and site facilities (M³ or kg as appropriate): wood, metal, plastic, general industrial and domestic waste.
- Total consumption of potable water in M³.

2.7.2 Performance Measurement and Proactive Monitoring

- a) An environmental monitoring program will be implemented to ensure that impacts from the project are identified and controlled at an early stage. This program will be based on the environmental impact assessment.
- b) Performance monitoring of both HSE leading and lagging indicators will occur monthly in the scheduled HSE meeting, this information will also be communicated in progress reports and in turn reviewed in progress meetings.

2.7.3 Regular Inspections

- a) In order to gain information on the effectiveness of systems and to monitor the conditions within the project or on the site a system of formal inspections will be conducted on weekly basis (Through Walk-Downs) in addition the daily HSE inspections by the HSE staff.
- b) The contractor and subcontractors site management shall participate in the weekly walk downs.
- c) The findings shall be formally reported to the involved parties for the required corrective actions.
- d) The contractor shall conduct an inspection for all equipment and tools before site entry. This inspection shall be re-conducted periodically.

2.7.4 Audits

- a) The JV HSE manager will establish a formalized system of auditing the project and sites to ensure the compliance with the JV HSE management system applicable laws.
- b) Audits will focus on the key risks, opportunities and challenges during the various phases of the project and will involve review of documentation and interviews with persons from all levels of the site and project teams.
- c) The goal of this Audit is to highlight the strengths and identify areas for improvement with the result of each assessment being a set of agreed actions and time frames for implementation.
- d) The JV HSE manager will establish annual HSE audit plan which shall be approved from the project director for implementation. This plan shall cover all project subcontractors, considering that the audit frequency of each subcontractor will be on semiannually base.
- e) The JV HSE manager has a right to involve an external auditor from the JV partners in order to implement the project HSE audit plan.

2.7.5 Subcontractors HSE Field Assessment

- a) The HSE performance of the subcontractors will be assessed by the JV HSE manager on a continuous basis for the duration of the project to ensure that the subcontractors are complying with all project related regulations and instructions, and applicable laws.
- b) The subcontractors HSE performance assessment on site shall be conducted principally in two ways:
 - ✓ The subcontractors HSE field assessment (at least weekly)
 - ✓ The subcontractors HSE performance review (at least semiannually)
- c) The subcontractor HSE performance review may be included in the subcontractor audit report.
- d) This section does not limit contractor right to implement any other procedure to assess subcontractor's HSE performance, or to take any other corrective action should this become necessary.

2.8 Stop Work Authority

- We believe that HSE culture is the collection of beliefs, perceptions and values that employees share in relation to risks within the organization. Stop Work Authority provides the employees with the

responsibility and obligation to stop work when a perceived unsafe condition or acts which may result in hazardous situations. This Authority should be initiated for conditions and acts that threaten danger or imminent danger to the organization employees, contractors, visitors, equipment, environment and the surrounding community.

- This Authority has been developed to empower the organization employees, encourage them to watch for unsafe conditions or processes, and when it's necessary, stop the job until it can be done safely. It is our employees' duty and right to exercise Stop Work Authority.
- These Situations that may include, but are not limited to the following:
 - a. Unsafe Acts and Behaviors
 - b. Unsafe conditions and Change in conditions
 - c. Environmental and social Impacts
 - d. Changes to scope of work or work plan
 - e. Failure or unsafe Equipment
 - f. Lack of knowledge, understanding or information
 - g. Emergency situation
 - h. Near misses and Accidents
- Stop Work Authority process flow chart:
 - a. STOP
 - b. NOTIFY
 - c. INVESTIGATE
 - d. CORRECT
 - e. RESUME
 - f. FOLLOW-UP (training on lessons learned etc.)



- If you're working and you see a process that is not being followed correctly, or if you notice at-risk behavior going on, take the initiative and call a quick time-out. Then confer with your workmates to make sure everyone knows the safe way to continue. If someone tells you to stop work, you need to stop the job immediately. Remember, your co-workers are trying to keep you safe, not punish you. Executing Stop Work Authority to right safety wrongs and catch potential unsafe action before it actually happens is not only responsible, it's also effective.

2.9 Lone Working Policy

- Lone workers who are working separately from others, outside normal hours such as cleaners, security, maintenance staff, warehouse workers.
As lone working is not subjected to constant supervision, the following measures shall be considered to ensure adequate precautions are in place;
- As low as reasonably practicable the lone works shall be eliminated to avoid the stress, lack of supervision and lack of rescue resources.
- Specific method statement and risk assessment shall be conducted for those who will work lonely, Review the risk assessment from time to time to ensure it is still adequate.

- When risk assessment shows that it is not possible for the work to be done safely by a lone worker, arrangements for providing help or back-up shall be put in place
- Where a lone worker is working at external workplace, the worker shall be informed about any risks and the control measures that shall be taken.
- Risk assessment shall help to decide the right level of supervision.
- There are some high-risk activities where at least one other person may need to be present. (confined space working where a supervisor may need to be present, as well as someone dedicated to the rescue role, electrical work at or near exposed live conductors where at least two people are sometimes required.)
- Precautions shall take account of normal work and foreseeable emergencies, e.g. fire, equipment failure, illness and accidents.
- Ensure that there is a safe way in and a way out for one person, and any temporary access equipment, which is necessary, such as portable ladders or trestles, to be safely handled by one person.
- Ensure that all substances and goods involved in the work be safely handled by one person.
- Ensure that young workers are not involved working alone situations.
- Ensure that all lone workers are medically fit and suitable to work.
- Training is particularly important if there is limited supervision to control, guide and help in situations of uncertainty. Training is critical to avoid panic reactions in unusual situations. Lone workers need to be sufficiently experienced and to understand the risks and precautions fully.
- Contractor shall ensure that employees are competent to deal with circumstances which are new, unusual or beyond the scope of training, e.g. when to stop work and seek advice from a supervisor and how to handle aggression.
- Lone workers shall be capable of responding correctly to emergencies. Risk assessment shall identify foreseeable events and emergency procedures shall be established and employees trained in them.
- Information about emergency procedures and danger areas shall be given to lone workers who visit the project. Lone workers shall have access to adequate first-aid facilities.
- Occasionally risk assessment may indicate that lone workers need training in first aid.

2.10 Management of Changes

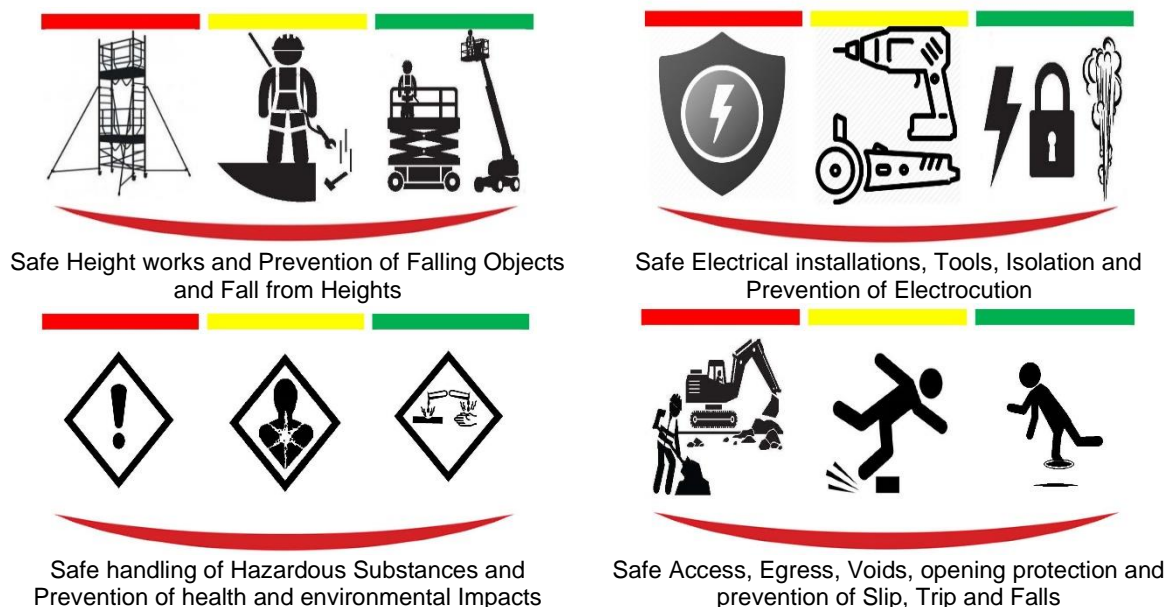
- To ensure that all changes to site, equipment, infrastructure, operations and processes whether permanent, temporary, incremental, planned, unplanned or as a result of an emergency, are effectively assessed and managed to minimize the impact on HSE performance, production capability and project delivery and that the change is planned and implemented in accordance with regulatory requirements and best practice.
- Change is a frequent and necessary occurrence in an operating environment. Poor change management can result in increased levels of HSE risk which can have both intended and unintended consequences. Many small changes over time, which may not seem significant in their own right, can lead to a large catastrophic event if not managed effectively and can result in a range of significant HSE issues.
- This procedure applies to Temporary or permanent modifications to buildings, structures, equipment, operations and processes; and Other process changes (e.g. engineering, automation, information technology, Facilities management, etc.).
- It does not apply to treatment of defects or repairs, including like-for-like, which require equipment to be reinstated to the original condition.
- Engineering and infrastructure change will always include an element of design. Legal duties placed on designers under local legislation must also be adhered to.

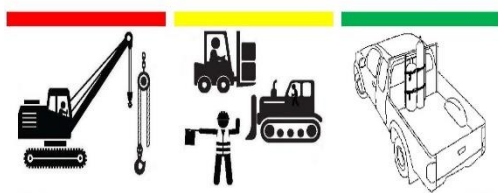
- The project management and the subcontractors shall comply with the following steps for the change's management:
 - a. **Step 1** - Initiation - Recognition of the Need for a Change;
 - b. **Step 2** - Registration - The Registration and Tracking Process;
 - c. **Step 3** – Conduct Review and Risk Assessment;
 - d. **Step 4** - Finalize and Implement Change; and
 - e. **Step 5** - Change Close-out, Review and Feedback;
- All changes shall be assessed and approved by the Project Manager in cooperation with the HSE Management and the other involved and interested parties.
- All changes management shall be documented and maintained in accordance with the project Filing System.

3.0 ZERO HARM Program

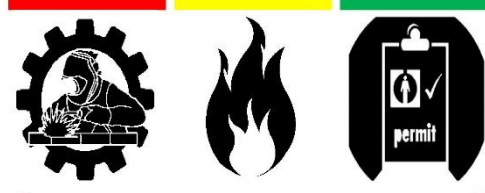
- This program is applied to all the JV working activities in order to;
 - ✓ Achieve Zero incidents/accidents, occupational illnesses and environmental impacts.
 - ✓ Promote zero-harm culture of safety and awareness to adhere best practice safety culture.
 - ✓ Increase employee's commitment and participation in the HSE Aspects.
 - ✓ Ensure proper planning of the company work activities and highlight the preventive measures to control the related hazards.
 - ✓ Set the principles of HSE rewarding system and zero tolerance behaviors.
- The following principles must be adhered to achieve Zero Harm program objectives and reach the best practice of Zero Harm environment;
 - ✓ Accidents Prevention/Reduction
 - ✓ HSE culture enhancement and Employee Involvement
 - ✓ Leadership, commitment and leading by example
 - ✓ Hazard free and safe working environment
 - ✓ Promote the occupational health monitoring and control

2.1 HSE Golden Rules





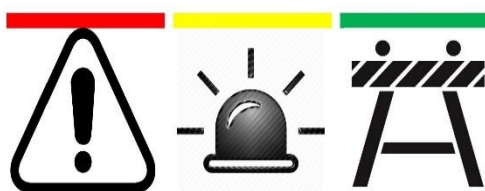
Safe Lifting, Rigging, Loading Operation and prevention Damages



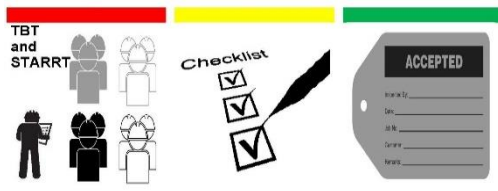
Safe Hot works, Storage practices and prevention of Fire and Explosion



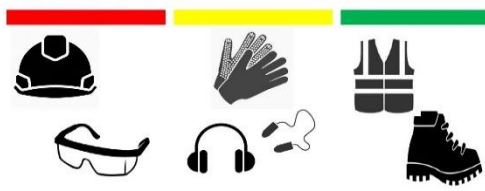
Maintain Best Housekeeping and Material Management Practices



Maintain Best Signs, Warning, Barricade and Isolation Systems Practices



Maintain Best HSE Documentation, Communication, Inspections and PTW Practices



100% Compliance with the Project Personal Protective Equipment Policy

2.2 Zero Tolerance Rules

Rule No.	Focus Area	Zero Tolerance Behaviors
Rule 01	Smoking in prohibited Areas	Smoking is permitted in designated area(s) in company buildings and projects. Smoking is prohibited in; Company Administrative Buildings. All work sites. Site Accommodation and offices. Company's vehicles.
Rule 02	Drug and Alcohol	Drug and alcohol are prohibited to be detected in employees' blood circulation system or possession, use, sale in the company sites / premises. Misuse of prescription or non-prescription medication and being under the influence, in possession, or attempting to bring alcoholic beverages or illegal drugs on a company worksite is prohibited.
Rule 03	Working at height	It is mandatory to wear safety harness, being 100% tie off and use proper fall protection It is mandatory to while working on 1.8 meter or more. It is mandatory to verify that scaffolds have been properly inspected /Tagged before use. Modifications only allowed by authorized scaffolders.
Rule 04	Energy Isolation - LOTO	Conduct effective isolation/Lock Out-Tag Out of energy sources before and during work on any process, system or equipment. Deliberate to remove Isolation Locks and Tags without prior approval from the authorized supervisor is prohibited.

Rule 05	Driving/Operating Equipment	It is mandatory to fasten the seat belt, respect the legal speed limit and not to use mobile while driving.
Rule 06	Permit to Work	Permit to Work (PTW) shall be established for Non-routine and high-risk activities or as per site instructions.
Rule 07	Reporting Incidents	All incidents must be reported to HSE
Rule 08	Workplace Theft	Theft will be dealt seriously, severely, including immediate termination.
Rule 09	HSE Documents Forgery	Documents Forgery is considered crime. it involves altering changing, or modifying a document for the purpose of deceiving. Giving false testimony during an incident investigation Refusing to cooperate in giving vital information in an incident investigation is prohibited and will be dealt severely.
Rule 10	Fighting <i>Fighting is unacceptable behavior/acts between company employees, unpredictable consequences that may lead to physical injury/harm.</i>	Fighting is prohibited between all company employees in all company premises. Any employee who considers that they are victim of workplace violence should report the incident.

4.0 Method Statement and Risk Assessment

4.1 Definitions

- Hazard:** any situation that has the potential to cause harm to the health and safety of personnel and/or to the environment and/or material resources.
- Risk:** is the likelihood of harm occurring as a result of a hazard and considers the probable severity of the consequences, including the number of people exposed to harm, should harm occur.
- Method Statement:** is a detailed written description of any given work activity, work procedure and/or sequence of tasks, that, in conjunction with a risk assessment, fully assesses any risks involved and details the subsequent HSE control measures that will be implemented to control the risks.
- Risk assessment:** is a written document that identifies hazards, estimates the hazard effect, who and how people might be at risk and determines the control measures based on the risk rating and the hierarchy of control (elimination, Substitution, Engineering Control, Administrative control, signage/warning, supervision, PPE).
- MSRA:** Method Statement and Risk Assessment

4.2 Method of Statement Process

- The contractor will **identify** all hazards and analyze the risks for their own and their third-party operatives associated with its activities. And accordingly take appropriate control measures to manage the risks during the construction and commissioning phases so as to reduce these risks to As Low as Reasonably Practicable (ALARP).
- The Contractor / Subcontractor is required to **describe** all routine works in general MSRA's for their activities on the Site e.g. Painting, levelling, concrete pouring etc.
- The MSRA is designed to assist the contractor to meet its HSE responsibilities in the workplace as follows: -
 - Clearly explain the task and the chronological phases of its execution.
 - Identify hazards and subsequent risks.
 - Assess the risks.
 - Analyze and control the risks using the hierarchy of control. And accordingly establish work methods and risk control measures.

- v. The contractor will take into consideration the following approach of work place activities' risk control;
 - Use work methods and equipment adapted to the individual, the task and the risk.
 - Collective protection has priority over individual protection.
 - Technical evolutions of the work and plan.
 - Review the MSRA document regularly and update when necessary.
 - Inform and train employees about the risks and the control measures (task specific instruction).
 - Document: record findings and control measures.
 - The MSRA format must include all of the above.
 - The MSRA format shall be attached with all the required documents to comply with this section and instructions are available upon request.
- d) The contractor site management reserves the right to issue a standard format of for the MSRA.

4.3 Risk Assessment Process

- a) Five steps or Risk Assessment Process are as follows: -

- Identifying the hazards.
- Evaluating the Risks.
- Identify and implement control measures.
- Recording the findings.
- Monitoring and reviewing the assessment

4.3.1 Identifying the Hazard

- a) This step is the basis of all Risk Assessment. Five key elements are to be considered to systematically identify all the significant hazards that exist in work activities: People, Equipment, Procedure, Work place (work environment) and Materials.
- b) After the consideration of the above five key elements, the inventory of hazards should be reviewed by following criteria: -
 - Determine what hazards have been identified.
 - Arrange hazards in priority of assessment.

4.3.2 Hazard Effect(S)

- a) The possible effect of identified hazards shall be depending on the location, surroundings and type of hazard.

4.3.3 Who and How People Might be at Risk

- a) The wide implications of hazards shall be taken in consideration. Exposed people classification can be estimated according to: -
 - Direct effect: - People who be affected in the immediate environment.
 - Indirect effect: - Other staff groups, such as maintenance personnel and cleaners, as well as visitors and public
- b) Special attention should be paid to inexperienced staff, lone workers or temporary staff and to the particular needs of disabled staff, pregnant women and children.

4.3.4 Identify the Existing Control Measures, if any

- a) The basic principle of controlling Risk in the work place is to either remove the Risk or to Control its possible impact.

- b) The following hierarchical process to be followed when implementing control Measures: -

Eliminate	:	–	Eliminate the risk by removing the hazard
Substitute	:	–	Substitute the process etc. with one that is less risky
Engineering Control	:	–	Control at source, Reduction, enclosure, reduce contact, safe working procedure
Administrative	:	–	Job rotation, adequate supervision, training and instructions
PPE	:	–	Provide suitable Personal Protective Equipment

- c) If it is not reasonably practicable to implement the first measure, the next level should be tried, with the least favored option being the provision of personal protective equipment.
- d) If complete protection is not afforded by one option it is reasonably practicable to introduce it, then a combination of measures is the most effective way to adequately control the risk.
- e) Contractor shall ensure that the effective control measures remain in place and then any change could be applied in workplace conditions, Add or modify to control measures is highly required.

4.3.5 Risk Rating

- a) Risk is essentially a combination of three factors:
- The severity of likely injuries that persons could suffer.
 - The likelihood of harm actually occurring.
 - The overall Risk can be determined through the company HSE risk matrix.

4.3.6 Decide the control measures after risk Rating:

- a) The control measures shall be considered in line with or proportional to time, effort and cost.
- b) The above-mentioned hierarchy shall be considered during deciding the control measures.
- c) Ensuring that the control measures will be available and applicable.
- d) The Contractor shall take appropriate control measures to manage the risks during the construction and commissioning phases so as to reduce these risks to As Low As Reasonably Practicable (ALARP).

5.0 Incident (Accidents / Near Misses) Reporting and Investigation

5.1 General and Definitions

- a) An accident is defined as an unexpected, unplanned and undesired event which results in injuries, deaths, and/or damages of machinery, equipment, and property losses.
- b) The priority in reporting and investigating incidents is to identify causes and implement corrective action to prevent the same or similar event from reoccurring.
- c) Work accidents: are the injuries which result from an accident which took place during or because of the execution of work. The contractor and its subcontractors shall report all accidents and incidents that fall into the following event categories:
- **Fatal accident (FAT):** A work related incident that causes someone to die.
 - **Lost Time Incident (LTI):** A work related injury or illness which results in the injured person being absent from work for one day or more.
 - **Medical Treatment Case (MTC):** A work related injury that requires treatment by medically qualified personnel (e.g. in a hospital) and which cannot be treated by a First Aider.
 - **Restricted Work Injury (RWI):** A work related injury which results in persons being able to report for work but who are unable to perform his individual professional duties because of the restrictions caused by their injury.
 - **First Aid Cases (FAC):** A work related injury, which requires treatment by means of first aid.
 - **Near Miss (NM):** An event, which under slightly different circumstances, could have resulted in harm to people or the environment or damage to equipment.

- **Environmental Event** (EE): An event with negative occurrence associated with a formal complaint against the company by a third party. An excess of the legal limits corresponding to agreements for liquid, solid or gaseous substances during an unconventional process.

5.2 Incident Reporting and Investigation Process

- a) Incidents related to the contractor working activities will be reported in accordance with the below manner:
 - The contractor will verbally notify within (24) hours of the event taking place to employer representative. The final accident report shall be reported to employer representative within one week which includes the injured person's details, equipment and machinery, incident location, what happened, how it happened, date and time in addition to the accident analysis and the actions taken.

5.3 Accidents analysis and Preventive Action

- a) The contractor and its subcontractor shall keep and maintain all incident reports and their relevant documents for the audit's purposes and for the employer requests.
- b) All incidents will be logged in the accident reporting and investigation digitalized system to track the incident trends and to track the corrective actions implementations.
- c) This analysis shall be used to identify the preventive actions to prevent the incident reoccurrence.
- d) The contractor shall produce a regular statistical data.
- e) The contractor shall communicate the incidents to the local authorities in accordance with the applicable legal requirements.
- f) The contractor shall immediately communicate the incident, root causes, and lesson learned to all concerned and interested parties via the Safety Alerts, TBT and periodical meetings.

5.4 Hazardous Situation Reporting

- a) Hazardous situations are either unsafe acts and/or conditions:
 - **Unsafe act:** performance of a task or activity that is conducted in a way that may threaten the health and/or safety of workers.
 - **Unsafe condition:** a condition in the work place that if left uncorrected is likely to cause injury or property damage.
- b) In order to reduce accidents and incidents on the Site a hazardous situation reporting system shall be established by the contractor.
- c) The overall objectives of the hazardous situation reporting system is to increase general safety awareness; to correct hazardous situations before they cause harm; and to act to prevent them from reoccurring.
- d) All Site personnel shall participate actively in the hazardous situation reporting system which is designed to support a positive HSE culture.

6.0 Permit To Work

- The contractor internally will maintain and update a list of activities requirements for which (as identified by risk assessment) required a Permit To Work. A specific HSE procedure will be developed by the JV HSE manager that concerning the JV PTW system.
- The PTW shall be issued to control the potential hazardous situation.
- The contractor shall develop the PTW authorization matrix and it shall be communicated with all project functions.
- No individual shall be involved in the PTW system without receiving the required training from the JV HSE manager.
- It is mandatory to ensure that no employee perform any task for which he is not authorized.
- All relevant control measures (Isolation procedures, Engineering control, air quality monitoring, etc..) shall be conducted by a competent person.

- The Permit To Work procedure shall be displayed at the working site.
- If there is an accident, the contractor shall stop the activity and report it to the issuing party.

7.0 Isolation Procedure (Lockout Tagout)

- The contractor will establish suitable isolation procedures and ensure safe working practices to all contractor and subcontractor processes. The overarching philosophy of this entire procedure is one person, one lock.
- All Authorized Persons shall be trained on the LOTO system.
- A periodical review of the LOTO procedure compliance shall be implemented by the JV HSE manager furthermore a corrective action shall be taken on time by the JV parties.

8.0 Site Access

8.1 General

- a) Access to and egress from the site for personnel and/or vehicles shall only be made via the gates and roads established for that purpose and approved by the contractor.
- b) Entering the site or any part thereof is not permitted to personnel and/or vehicles without an appropriate access authorization. Access authorizations may only be granted by the contractor. This will be in accordance to site pass application
- c) All personnel and/or vehicles entering or leaving the site, including objects or materials carried therewith, and any locker or storage facility on the site shall be subject to search or other control measures by the security staff authorized by the contractor. This will be via exit / entry permit.
- d) All equipment e.g. cranes, lifting equipment, power tools, excavators, piling rigs, scaffolding materials etc. will be subjected to inspection and approval prior to use on the Site, the use of any equipment not inspected by the contractors prohibited. This inspection will be recorded on a form and the equipment will be coded according to project color coding, And in- accordance to inspection checklists.
- e) Authorized suppliers and their vehicles shall remain on the site only as long is reasonably necessary for the orderly execution of their tasks.
- f) The site working hours shall be stipulated by the contractor in accordance with local regulations and the project requirements.
- g) Only personnel with specific authorization from the contractor are permitted on the site outside of the stipulated working hours, work at night and weekends and public holidays.
- h) The contractor/subcontractor shall ensure that its personnel do not consume alcohol, intoxicants and illicit drugs or to be under the influence of the same on the site, including the site facilities. Any person found in possession and/or under the influence of alcohol or illicit drugs on the site will be immediately removed from the Site and not permitted to return (Level 3 disciplinary action).
- i) The contractor reserves the right to conduct alcohol/drug-tests on the site personnel & subcontractors, and results will be recorded at drug test form.
- j) Non-prescribed medicines shall not be permitted. While on job use of intoxicant (including sedatives, tranquilizer, unless permitted by an authorized physician) is strictly prohibited
- k) Any person involved in incidences of occupation violence (fighting or bullying) will be immediately removed from the Site and not permitted to return (Level 3 disciplinary action).
- l) Smoking is only permitted in areas designated for that purpose by the contractor.
- m) Fire arms and weapons are prohibited on Site. Contravention may lead to disciplinary or legal action.
- n) The contractor will assign 24/7 trained and authorized security personnel for site guarding and controlling the access and egress.
- o) The security personnel will keep and maintain the security registers up-to-date.

8.2 Site Access Documentation

- a) The contractor and subcontractors shall provide the following documentation for each person who is required to enter the site to work:

- b) The subcontractor shall notify the contractor in writing at sufficient certain period advance of the arrival of each person to work at the site. A standard application form, shall be used for this purpose (Site Pass Application). Any exceptions to this time period will be at the sole discretion of the subcontractor
- c) The subcontractor shall attach legible copies of the following documents to the application form:
 - Passport or national ID card.
 - Social security card or certificate or other official attestation
 - A valid visa or work-permit.
 - Written and signed confirmation by the Sub-contractor that the employee is legally employed, noting the type of employment contract – I.e. permanent, fixed duration or temporary contract.
 - Color copies of training certifications and qualifications relevant to the persons work activity and to any Applicable Law: E.g. construction Site machine operator, work at height, safety harness, banks man/rigger, first-aid, etc.
- d) All documents shall be made available in original form to the contractor upon request. It is the responsibility of the subcontractor to ensure the validity of all required documents prior to submitting to the contractor.

8.3 Site HSE Induction

- a) Once the contractor representative has received and approved the documentation, each person must then successfully complete the site HSE induction before entry to the site will be permitted even permanent, temporary persons or visitors.
- b) The JV HSE manager will issue the details and structure of the project HSE induction and it will be shared with all interested stakeholders. The HSE induction syllabus may include but not limited to the project policies, site HSE rules, main hazardous activities, specific HSE instructions ...etc.

8.4 Site Entry Authorization to Work

- a) Once all of the pre-conditions have been fulfilled for each individual, they will be issued with a personal entry badge, to pass the security point at the Site entrance.
- b) Personal entry badges will contain the following information:
 - Name and photograph of the holder
 - Position
 - Company name.
 - Sub-contracting company (where applicable)
- c) Personal entry badges may only be used by the person to whom they have been issued. Any breach of this regulation will result in immediate expulsion from the Site for all persons involved.
- d) Lost or stolen badges must be immediately reported to the Site Security Guards and the contractor.
- e) Site personnel who have completed their Work at the Site must return their badge to the Site guards or contractor before leaving.
- f) For approved persons who are to work at the site for short periods, the contractor will issue them a temporary badge against a piece of identity (ex; National ID, Passport, etc.) each time they enter the Site.

8.5 Service Providers

- a) Service provider: refers to an individual or organization that provides an ancillary service which is not directly related to the construction, erection or commissioning activities of the site, such as:
 - Expert verification / certification / engineer services.
 - Break-down / emergency repairs to construction site machinery / plant / equipment.
 - Waste removal services.
 - HSE training.

- Other services subject to the approval of the contractor.
- b) Entrance of service providers to the site is subject to approval by the contractor.
- c) The contractor shall seek approval for a service provider to enter the site using the service provider declaration form issued through site instruction at least two working days in advance, except in the case of impossibility (E.g. break-down service)
- d) The contractor will provide precise details of the services to be performed and the location on site.
- e) Service providers shall remain accompanied by the contractor, who must ensure that they comply with all of the site safety regulations and Applicable Laws at all times while they are on the site.
- f) A separate service provider declaration shall be used for each intervention.

8.6 Visitors

- a) Visitors refer to persons who, at the discretion of the contractor, are permitted to enter the site under strict conditions, to observe the site and/or site activities in relation to the pre-stated purpose of the visit. the site regulations apply equally to site visitors
- b) Visitors not permitted to engage in any site work activities.
- c) The subcontractor shall announce visitors to contractor for authorization one week prior to the intended visit to the Site.
- d) All visitors shall successfully complete the contractor visitor safety induction before entry to the Site.
- e) Visitors shall be accompanied at all times while on the site by a permanent pass holder who shall ensure that they wear and use the mandatory PPE at all times.
- f) Approved visitors shall be issued with a visitor badge against a piece of identity each time they enter the Site.

8.7 Motor Vehicle Circulation within the Construction Site Area

- a) Entering and leaving the site with vehicles of any kind shall be subject to authorization and control by the contractor.
- b) The contractor will not be liable for any damages or thefts of the subcontractor's or private vehicles.
- c) Applicable Laws shall apply to the vehicle traffic within the Site area and all vehicles shall be insured against liability and marked clearly with the subcontractor's name and with the Site entry authorization clearly visible.
- d) The subcontractor shall supply copies of the vehicle registration, insurance and certification papers, and the driver/operator license along with the application for vehicle access.
- e) Pedestrian circulation shall have priority over vehicle circulation unless otherwise indicated.
- f) The maximum speed on site is 20 km per hour, if not limited by further traffic signs or other instructions.
- g) Vehicles used on site for conveying materials (forklifts, telescopic chariots, trucks, etc.) and all vehicles that are to be used within the Site's buildings must be fitted with both visual (e.g. flashing yellow or orange beacons) and audible warning devices for reversing.
- h) Passengers must not be carried on any vehicle unless the vehicle is designed for that purpose. Generally, the ferrying of personnel in vehicles on the Site is prohibited unless otherwise authorized by the contractor.
- i) The Site's vehicle circulation regulations and the speed limitations shall be strictly observed. In case of breach of the regulations the contractor reserves the right to revoke vehicle access authorization and impose disciplinary action.
- j) Any oil leaks or spills from vehicles used by the subcontractor onto the ground, roads and concrete surfaces must be cleaned up and reported immediately by the subcontractor.
- k) The repair of any damage to the ground, roads or concrete surfaces resulting from oil leaks or spills from vehicles used by the subcontractor shall be at the expense of the subcontractor.

- 1) If the subcontractor does not carry out the cleaning or the repair oil leaks or spills from its vehicles in a reasonable time, the contractor will take appropriate action at the expense of the subcontractor.

8.8 Private Vehicles and Parking Area

- a) Driving on the Site with private motor vehicles including company vehicles for personal transport, is not permitted unless authorized by the contractor.
- b) Private vehicles shall be parked in an orderly manner in within the identified parking area/s.
- c) The dumping of rubbish and waste in the Site parking area is strictly prohibited.
- d) Camping, caravans and the like are not permitted on the Site or in the parking area.
- e) Overnight stays on any part of the site are not permitted.

8.9 Transportation of Materials, Equipment and Tools to the Site and Removing

8.9.1 Transports to the Site

- a) Transport and delivery drivers shall be subject to all provisions of the Site Regulations.
- b) Transport and delivery drivers shall be required to complete a simplified safety protocol before access to the Site is granted.
- c) Transport and delivery drivers shall remain accompanied by the Contractor and its subcontractors at all times while on the Site.
- d) All supplies (materials, equipment and tools, etc.) transported to the Site shall be clearly and visibly marked with the Contractor's name and be accompanied by appropriate documents, certificates and verifications according to Applicable Laws.
- e) The sender, the recipient as well as the contents of all transports and deliveries must be clearly recognizable on the shipping documents.
- f) The Contractor shall ensure that the transport, handling, provision or storage of shipments is carried out in an orderly manner without creating risks to third parties, the Project, the Site equipment or the environment.
- g) The transport of any dangerous goods or hazardous substances shall be notified in writing and submitted along with the (MSDS), to the Contractor, prior to delivery to the site minimum 24 hours in advance.
- h) The transport, storage and handling of dangerous goods and hazardous substances shall comply with the MSDS and Applicable Laws.
- i) Deliveries shall be made during the normal working hours on the Site. For any shipments and deliveries made outside of normal working hours their time of delivery and unloading shall be authorized by the contractor. Prior notification shall be made to accommodate for any requirements for Site Supervision and access permission.
- j) Simplified access procedures, e.g. by means of permanent access authorizations for regular suppliers or transporters of construction materials and the like may be implemented at the discretion of the contractor.

8.9.2 Removing from Site

- a) Contractor shall be informed prior to shipping and removing of materials, equipment, and tools, etc. from the site on the form designed for that purpose.

8.9.3 Access to the Site and Working Areas

- a) The contractor shall reasonably maintain all common Site accesses and roadways in accordance with its obligations.
- b) The Contractor and its subcontractors shall not block, obstruct or otherwise encumber the Site roadways without prior approval from the contractor management.
- c) The subcontractor shall keep all access and egress to its work areas safe and unencumbered at all times.

8.9.4 Additional Access Ways

- a) Access ways, which may be required in addition to existing Site roads, may be installed subject to approval from the contractor.

8.10 Site Working Hours

- a) The Site working hours shall be stipulated by the contractor in accordance with Applicable Laws and the project requirements.
- b) The contractor and its subcontractors shall be responsible to ensure its personnel respect the Site working hour's instruction.
- c) The contractor and its subcontractors shall be responsible to ensure its personnel do not exceed the maximum allowable hours worked according to any Applicable Laws.

8.11 Overtime, Weekends, Public Holidays and Shift Work

- a) Overtime, or works outside of the Site working hours, shall be subject to Applicable Laws and approval by the contractor.
- b) The Contractor shall be responsible for ensuring that all its personnel working on the Site outside the normal Site working hours have been registered with the Site security guards. Such information shall include the precise location of the work activity to ensure that in the event of an emergency, rescue services can locate and remove an injured party with a minimum delay.
- c) The Contractor shall be responsible for notifying and gaining approval from any Competent Authorities, where required by Applicable Laws, for overtime work, work on weekends or public holidays or shift work etc. within the required timeframe.
- d) The Over Time Night Shift Permit will be submitted to the contractor 24hrs before work start.

9.0 Personal Protective Equipment (PPE)

9.1 General

- a) The Contractor and its subcontractors shall be responsible for providing its personnel with all PPE.
- b) The Contractor and its subcontractors shall be responsible for ensuring its personnel use the mandatory PPE at all times and any other PPE that maybe required this PPE shall be suitable to the task/risks.
- c) Collective and self-acting protection always has priority over any other specific or additional PPE to the mandatory PPE required on the Site.
- d) When collective protection measures which reduce and control any risks are insufficient, or are impossible to implement, individual protection is compulsory.
- e) All PPE shall be in full compliance with the Applicable Laws, codes and standards; e.g. OSHA, European Norms (EN) American National Standards Institute (ANSI) etc. the contractor reserves the right to impose a minimum standard for PPE.
- f) The Contractor and its subcontractors shall be responsible for providing its personnel with appropriate training in the use, maintenance and storage of all PPE.
- g) The Contractor and its subcontractors shall be responsible to ensure that all PPE is stored and maintained in accordance with the manufacturer's specifications, kept in good condition, and is replaced when damaged or defective.
- h) The Contractor and its subcontractors' personnel are responsible to use/wear the PPE provided to them by their employer. They shall also inform their employer immediately of any damage, defect or fault with the PPE.

9.2 Mandatory PPE

- a) The following PPE is mandatory at all times for all personnel who enter the Site:
 - Safety helmet

- Safety footwear – adapted to the type of work and the work environment.
 - Eye protection – all personnel on Site shall wear eye protection (standard safety glasses are the minimum requirement) at all times. Other eye protection adapted to the work shall be available at or in immediate proximity to the work zone. Sealed protective goggles shall be worn when cutting or grinding metals and concrete. Corrective lenses must also be safety glasses or be protected with overglasses or by a visor.
 - High visibility vest – while performing hot work (welding, grinding, etc.) this must be of a fire-retardant material.
 - Safety gloves – safety gloves adapted to the task being performed should be worn to protect hands against injury. Working without gloves is only permitted where no risk to the hands exists or where the work cannot be safely performed while wearing gloves.
- b) Hearing protection:
- The Contractor and its subcontractors shall take all reasonable measures to reduce noise levels in the workplace at their source.
 - The Contractor and its subcontractors' personnel shall have hearing protection available at all times, preferably on their person or in immediate proximity to their work zone.
 - Hearing protection is strongly recommended to be used at noise levels of 80 dB and above.
 - The use of hearing protection is obligatory at noise levels of 85 dB and above and/or in areas signposted for its use.
 - The contractor shall perform regular noise level measurements and inform the subcontractors of the results.

9.3 Additional or specific PPE

- a) Other specific PPEs, includes but is not limited to:
- Respiratory protective equipment - In work environments concentrated with dust, fumes, vapors or gases, personnel shall be supplied with and use respiratory protective equipment adapted to the risk. The Contractor shall be required to identify and measure respiratory risks in the workplace, to monitor exposure levels in accordance with occupational exposure limits and maximum exposure limits, and to put in place appropriate control measures - including: issuing suitable dust masks or respirators and/or mechanical ventilation systems.

10.0 Hygiene and Welfare Facilities

10.1 General

- a) Site facilities refer to: site offices, refectories, rest/break areas, locker rooms, hygiene and sanitary amenities, workshops, Site containers and Storage containers and waste disposal areas.
- b) The contractor shall ensure that reasonable site facilities are provided and maintained according to the number of its personnel, applicable laws and the employer requirements.
- c) The installation and removal of any site facility is subject to approval from the employer.
- d) The contractor will allocate the sub-contractor an area for the installation of its site facilities.
- e) The Sub-contractor shall be responsible for connecting and disconnecting its site facilities to the terminal points for potable water, waste water and electric power, under contractor supervision and approval, where this has been supplied by the contractor, in accordance with statutory requirements at its own expense. Connection to these facilities is to occur only after written authorization is given by the contractor.
- f) The subcontractors shall notify the contractor in writing of its requirements for site facilities, including an installation plan, in good time, to allow the approval process and allocation of a suitable area to take place without causing delay to the contractor's starting schedule.

- g) The facilities shall be reasonably identified with the contractor's name.
- h) Where the subcontractor fails to install and maintain a satisfactory standard of site facilities, contractors reserves the right to install and maintain such facilities at the subcontractor expense.
- i) It is prohibited to take rest breaks (including consuming food) in any locations other than in designated areas, any person found eating and/or taking resting in non-designated areas will be subject to the provisions.

10.2 Installation and connection to services

- a) The contractor shall be responsible for preparing the area it has been allocated at its own expense, including making safe access to that area, for the installation of its site facilities.
- b) The contractor shall be responsible for obtaining any conformity documents for its site facilities in accordance with applicable laws at its own expense. These documents shall be available on site for inspection by the employer.
- c) The contractor and its subcontractors shall be responsible for maintaining its facilities.
- d) The area allocated to the contractor and its subcontractors for the site facilities shall be left in a clean and orderly state, devoid of all materials and waste, with all underground connections to terminal points and foundations and supports, etc. completely removed following their demobilization.

10.3 Hygiene and Sanitary Facilities

- a) Hygiene and sanitary facilities refer to toilets/WC hand basins, wash rooms.
- b) The contractor and its subcontractors shall install and maintain separated male and female hygiene and sanitary facilities fully adequate in size, number and configuration in order to service the number its personnel according to its contract as the below:
- c) Adequate sanitation facilities, sanitary sewage and water source shall be provided in the workplace.
- d) Sanitation facilities shall be made accessible in all time in near proximity to the worksite.
- e) Urinal facilities shall be provided in appropriate enclosed places so that it cannot be seen from any other places inside or outside the location.
- f) The contractor and its subcontractors shall ensure that its hygiene and sanitary facilities comply with applicable laws, and:
 - Have clean and safe access;
 - WC's are partitioned from each other and have lockable doors for privacy;
 - Are ventilated and provided with adequate lighting;
 - Do not open directly into workrooms or mess rooms.
- g) The contractor and its subcontractors shall ensure that these facilities are kept clean and promote hygienic conditions.
- h) The contractor and its subcontractors shall ensure that its personnel use the hygiene sanitary facilities for the purpose for which they were installed
- i) The contractor and its subcontractors shall ensure that no oil, chemicals or other foreign objects be disposed of into these facilities.
- j) The subcontractor shall be liable for any costs arising from any damage to the sewage and waste water disposal system resulting from misuse on the part of the contractor.
- k) Every sanitation facility and its openings shall be covered as appropriately as to prevent exposure to different weather conditions and falling materials.
- l) All Sanitary piping and installations shall be in accordance with the technical standards and specifications of sanitation facilities.
- m) Sanitation facilities shall be provided with adequate lighting and ventilation.

- n) In case lead components, permanent poisoned materials are used, the workplace shall be provided with special sink for hand wash for every five employees in addition to soap and a brush for nails wash and any other washing means with an adequate water source to remove these materials.
- o) The contractor may, at its own discretion or be compelled by applicable laws, to install collective or communal hygiene facilities, in part or entirely, on the Site.
- p) The contractor and its subcontractor shall inform its personnel that the use of washrooms and toilet facilities which form part of the final installation of the Project (e.g. toilets installed in the control room) is not permitted.
- q) Failure to provide and/or failure to maintain the hygienic conditions of these facilities will be performed by contractor and back-charged to the subcontractor.

10.4 Potable water

- a) The contractor shall be responsible for supply of potable water shall be provided in accordance with the applied quality standards which is approved for drinking purposes by the local authority having jurisdiction (the authority concerned). Cold potable water shall be provided in hot weather.
- b) The drinking and potable water should be analyzed (Chemical, Physical and Biological) periodically.
- c) The contractor and its subcontractor shall ensure that the water supply at its sanitary facilities such as toilets, hand basins, dishwashing amenities, etc., is maintained to the general standard of potable water. The contractor and its subcontractor shall be responsible at its own expense for any additional treatment or filtration to achieve this standard.
- d) As a rule, the minimum quantity of fresh drinking water supplied by the contractor and its subcontractors to their personnel shall be 1.5 liters per person per day. However, where local conditions and/or Applicable Laws require a larger quantity, the Sub-contractor shall meet this requirement.

NOTE: where the temperature of the work area exceeds 30 degrees Celsius or if the work is of a strenuous nature then the minimum amount of water shall be increase to 3L per person per day.

- e) An adequate supply of potable water shall be provided in all places of employment and shall be distributed in such a manner as to prevent contamination between water consumer and the supply source.
- f) Potable water tanks shall be fabricated of anti-corrosion materials, which shall not affect the physical or chemical properties of potable water. Also, these materials shall not cause any alteration of the color, taste or odor of the potable water, and shall not be affected by heat or humidity, opaque (not transparent) and has no any bad health effect, and in accordance with the regulations of the concerned department.
- g) Potable water tanks shall be clearly marked as containing "Safe Drinking Water".
- h) When designing potable water tanks, consideration shall be given to avoid sharp angles between tank walls which will allow the accumulation of dirt and germs and restrict cleaning operations.
- i) Any container used to distribute drinking water shall be clearly marked as to the nature of its contents and not used for any other purpose.
- j) Uncovered containers shall not be used and potable water shall not be stored in any other containers not designed for storing potable water.
- k) The contractor and its subcontractors shall inform their personnel that any other water on the site in the permanently installed plant systems and/or in the temporary plant systems containing industrial water or firefighting water is not potable or drinkable.
- l) Failure to provide and/or failure to maintain the hygienic conditions of these facilities will be performed by contractor and back-charged to the subcontractor.

10.5 Non-potable water

- a) Outlets for non-potable water shall be conspicuously posted, “Danger, Water Unfit for Drinking, Washing or Cooking” in Arabic Language, English Language and the most common language used in the work place.
- b) There shall be no cross-connection, open or potential, between a system furnishing Potable water and a system furnishing non-potable water.

10.6 Washing facilities

- a) Toilets shall be provided with adequate and sufficient number of washing facilities whenever required as per the risk assessment and site conditions.
- b) Each washing facility shall be kept in good sanitary condition and provided with running water.
- c) Whenever employees are required by a particular standard to wear protective clothing, change rooms equipped with storage facilities for street clothes and separate storage facilities for the protective clothing shall be provided.
- d) Adequate washing facilities shall be provided for employees engaged in the application of paints, coating, insecticides, or herbicides, or in other operations where contaminants may be present. such facilities shall be in near proximity to the worksite and shall be so equipped as to enable employees to remove such harmful substances.

10.7 Rest Area

- a) The contractor and its subcontractors shall provide rest and dining areas for their staff.
- b) It is prohibited to take rest breaks (including consuming food) in any locations other than in designated areas, any person found eating and/or taking resting in non-designated areas will be subject to the provisions.
- c) Suitable dining area shall be provided in accordance with sound general hygienic conditions. It shall be protected against sun rays, dust and rains with solid and cleanable floors. The area shall be provided with potable water, enough number of tables, seats, plastic garbage bags and metal garbage containers for plastic garbage bags, smoking shall be prohibited in these areas.
- d) All joint and shared dining areas shall be provided.
- e) All food services in the workplace shall be complying with the requirements of the authority concerned and sufficient number of tables and seats shall be provided.
- f) All occupational health and housekeeping rules shall be followed for food services in the workplace.
- g) Containers of rotten or hazardous wastes shall be manufactured in a way that prevent leakage and enable full and comprehensive hygienic cleaning and maintenance. These containers shall be provided with solid and tight sealed covers.
- h) Solid and liquid wastes shall be removed promptly to keep a healthy environment.

10.8 Pest Control

- a) The Contractor and its subcontractors shall take all reasonable precautions (Physical and Chemical control) against the infestation of its site facilities and work areas by vermin and other pests.
- b) The Contractor and its subcontractors shall be responsible for pesticide treatment of its site facilities and work areas at its own expense.
- c) The Contractor shall inform the employer in writing of any infestation and subsequent pesticide treatment of its Site facilities and work areas.

11.0 Emergency Preparedness and Response

11.1 First Aid and Medical Evacuation Procedures

- a) The contractor and its subcontractors shall establish a first aid facility staffed by a professional medical staff based on risk assessment and applicable laws.

- b) The provision and maintenance of a first-aid facility does not relieve the contractor and its subcontractors from its obligation to provide its personnel with adequate first-aid provisions in the workplace.
- c) The contractor and its subcontractors shall provide the required first aid training for its employees in accordance with the legal requirements.
- d) First-aiders shall hold an accredited first-aid certification equivalent to Red Crescent or other nationally recognized workplace first-aid qualification.
- e) The contractor and its subcontractors shall include the names of its first-aid and/or medical personnel along with their certifications in its Emergency Plan.
- f) All site first aid personnel shall be provided with identification, e.g. green helmets with a red crescent or a first aider label on the helmet/high visibility vests, or as specified by the contractor.
- g) The contractor and its subcontractors should keep an updated log for first aid cases and injuries and these registers will be available and updated.

Medical Evacuation Procedures

- a) The contractor shall issue a specific instruction detailing the procedures and responsibilities during emergencies (will be obligation on all project subcontractors) to ensure:
 - Suitable first-aid, external medical treatment and rescue services are readily available to all Site personnel, and the location and services agreement will be available one month before commencing the construction works.
 - The protection and safe and orderly evacuation of personnel from the construction Site in the event of a significant emergency.
 - Safe and unencumbered intervention of the civil emergency and rescue services when required.
 - The contractor and the subcontractor and their personnel shall cooperate fully with the first-aid and emergency procedures.

11.2 Fire Protection, Prevention and Evacuation Procedures

11.2.1 General

- a) The contractor and its subcontractors shall take all reasonable steps to ensure:
 - It meets its responsibilities under applicable laws with regard to fire prevention and fire safety in the workplace.
 - Its work areas and site facilities are adequately protected against the risk of fire based on risk assessment as the following:
 - Fire risk assessment and determining of controls
 - Storage of combustible and flammable materials
 - Rubbish disposal and housekeeping arrangement
 - Storage, handling and use of compressed gas cylinders
 - Control of hot works
 - Smoking policy
 - Fire safety inspection
 - Site security arrangements for reducing arson
 - Fire detection systems
 - Firefighting arrangement / facilities at site
 - Emergency procedure
 - Emergency organization chart
 - Emergency contact numbers

11.2.2 Firefighting and Evacuation Planning

- The subcontractors shall submit to the contractor a map showing all firefighting equipment locations, rescue entries, emergency exits, means of egress, assembly points, access to all required firefighting equipment and apparatuses in the workplace.
- The contractor shall develop a fire protection and prevention plan throughout all phases of the construction and works to be implemented by all the project subcontractors.
- The contractor shall ensure the availability of all required fire protection and suppression equipment in accordance with the applicable laws and standards.
- The fire protection plan shall include all applied procedures in emergency cases, fire accidents in the worksite, and building or worksite evacuation steps. All employees shall be trained on applying those procedures. Regular fire evacuation (Minimally every six months) drills shall be conducted to ensure the effectiveness of those procedures and the name and telephone Numbers of the person(s) responsible(s) of the fire protection plan.
- Manual or automatic alarm systems shall be provided in the workplace to be used in case of fire accidents or any other emergency cases to warn the employees to evacuate the location or the building.
- A qualified employee in the worksite shall be assigned for regular inspection of all firefighting equipment and ensure their reliable working conditions and shall be provided with appropriate training to perform this inspection.
- Access to all firefighting equipment shall be kept free from any obstruction and maintained at all times. All construction sites shall be accessible (fire lane shall be provided) to permit approaching of Civil Defense vehicles/equipment through a not less than a 6-meter-(20 feet)-wide unobstructed access way capable of withstanding firefighting equipment loads.
- All exit routes in construction sites shall be properly protected and free of any debris, fall off hazardous materials or any other obstacles in all times. In case any of these exits is closed, an alternative exit shall be provided.
- All cars shall park 6 meters (20 feet) away from the new buildings or buildings under construction.
- Firefighting equipment shall be located in designated places, visible and easily accessible in all times for all employees in the location. Civil Defense personnel shall be able to access all connections/facilities and guiding valves and all outside fire protection system components in all times. Guiding signs shall be fixed to clearly identify the location of those components when it is difficult to see them.
- A regular inspection (minimally in monthly basis) shall be conducted for all fighting equipment and maintaining them in good working condition. Damaged or defective equipment shall be replaced immediately.
- The subcontractors shall provide the employees with adequate training on firefighting procedures in accordance with the legal requirements.
- An adequate means of escape shall be maintained. Gangways, doors and stairs shall be kept free of any obstructions at all times in view of the changing nature of the construction operations, escape routes shall be frequently surveyed. Illumination shall be provided in emergency cases in each floor such that illumination intensity shall not be less than 50 LUX especially near emergency exits.
- Adequate emergency exits shall be provided in every building under construction according to the number of employees in the building, and by any means they shall not be less than two emergency exits in each floor above the ground floor.
- Adequate signs shall be provided in the location or the building to direct to escape routes of the location or the building which shall be used by all employees in emergency cases to reach to the assembly points.
- Smoking is prohibited in any place within or on the roofs of the under construction new buildings or even in the buildings under maintenance and enough “No Smoking” signs shall be provided in the location.

- Any hot works (welding, cutting, heating and burning) shall not be performed without obtaining appropriate hot work permits.
- In demolition operations which include flammable materials, hydrants with fire hoses and water tankers equipped with pumps shall be provided.
- Evacuation plan shall be displayed in all static locations and assemble point show (You are Here)
- That suitable firefighting equipment adapted to the specific risk in its work areas is provided and maintained in accordance with Applicable Laws, and that its personnel receive appropriate training in the use of those equipment.
- Its personnel are sufficiently informed of all fire risks and trained to be able to act appropriately in the event of a fire.
- The contractor shall ensure that periodic inspections of all its firefighting equipment are made and recorded in accordance with Applicable Laws.
- The contractor shall ensure that as far as practicable only an absolute minimum of flammable material be kept in the workplace.
- The contractor shall as far as practicable replace flammable material or products with non-flammable material or products.
- No more than 10 gallons of paints and flammable and combustible liquid shall be stored at night in or within 15 meters of the building unless it is stored in designated flammable and combustible stores
- The contractor shall remove from the Site any flammable material immediately or as soon as practicable after it is no longer required.
- The contractor shall immediately report the occurrence of any fire to Employer Representative.

11.2.3 LPG Liquefied petroleum gases cylinders

- The contractor shall take appropriate provisions to keep the CGC in ground level
- The CGC Shall kept in air protected from unauthorized entry by fence not less than 2 meters' height
- LPG Cylinders regulatory shall be examined and appropriate designed to capable of withstanding an operational pressure more than 250 PSIG, cylinders hoses shall be examined withstanding an operational pressure more than 350 PSIG, the hose length shall not exceed 2 meters

11.3 Pandemic Diseases Infection Prevention

- Early announcement and health risk assessment for breakout of any pandemic diseases is the first step for infection mitigation and achieve highest level of effectiveness in the response to the outbreak.
- Most of Pandemic diseases have a cycle of infection and transmission, which includes Infectious agent (Biological agent such as viruses, bacteria, fungi), **Reservoir** where the organism resides, thrives, and reproduces, **Transmission mode** (direct/indirect contact, airborne, droplet, injection and ingestion of contaminated food and water) and **Susceptible Host** who is the next infected person.
- Emergency response and mitigation process will be subjected to break any phase of infection and transmission cycle as per the following hierarchy of controls;
 - a) Identify the proper nature of the infectious agent and its related diagnose from accredited source of information.
 - b) Establish a well-equipped station with trained staff for early recognition and infection source control, this shall be supported with appropriate administration for cleaning and sanitization. A separated quarantine for infected and suspected persons, if required.
 - c) Provision of required cleaning and disinfection facilities and materials for site personnel and work environment such as touchable services, tools, equipment, in addition to develop appropriate procedures in accordance with the transmission mode.
 - d) Implement good practices of isolation through maintaining social distance between site personnel in offices, workplaces, kitchen, bedrooms...etc.

- e) Provide a good ventilation in the closed places through nature ventilation such as windows, doors and mechanical ventilation such as fans and hoods to proper flow direction and distribution, considering the quality of the outdoor air.
- f) Reducing the number of exposed persons to infection and frequency of exposure as well.
- g) Conduction adequate awareness and specific training regarding nature of disease, transmission mode and required health precautions.
- h) Ensuring provision adequate number of competent health care staff.
- i) Develop a monitoring and screening plan for site persons in accordance with the infection symptoms.
- j) Develop a matrix for what PPEs are required and who will wear and then provide appropriate and adequate PPEs.
- k) Develop very restrict procedure for the travel and meetings control during the pandemics.

11.4 Emergency Review

- a) The contractor shall review the emergency response in regular basis.
- b) The contractor shall notify the local authority that they will conduct an emergency drills one week before commencement
- c) The contractor shall document the drills report and evaluate the findings.
- d) The contractor shall define the weakness and strength points for the continual improvement for the emergency preparedness and response planning.
- e) A corrective action plan shall be implemented to rectify the gaps. The HSE manager will follow the action closure with the concerned parties.

12.0 Operational Control

12.1 General

- a) Basically, the contractor will execute the works in accordance with HSE requirements and this plan such as (working at heights, lifting procedures, confined space entry, Noise monitoring and measuring plan, Dust control plan, etc.)
- b) The contractor may issue other site regulations to control the working activities during the project phases if required.
- c) The site regulations shall apply to the construction, erection and commissioning phases of the Project and to all ancillary activities part thereof, with the aim of establishing and maintaining safe and healthy work conditions for Site personnel, for the protection of the environment and material resources, and to maximize the efficiency and quality of the works.
- d) The site regulations apply to the contractor and equally to subcontractors; suppliers and their personnel; and visitors, these persons to be the contractor's own personnel under the site regulations and the contractor shall be responsible for them as such.
- e) The contractor shall instruct his personnel on the content of the Site Regulations before starting work on the Site, maintain records of such instruction, and shall continuously ensure that the Site Regulations are applied to the scope of works.
- f) The site regulations shall apply equally to the Site related work areas outside the perimeter fencing.
- g) Any additions or supplements to the present site regulations will be stipulated by the contractor through site instructions (procedures) and site notes and shall be considered to be part of the Site regulations by the contractor.

12.2 Subcontractor's Management

12.2.1 Issue Instructions to the subcontractor

- a) The contractor reserves the right to issue instructions, both verbal and written, to the subcontractor and his personnel on site with respect to the contractor's obligations under the site regulations.

- b) The contractor is authorized to stop the subcontractor work verbally or in a written way where there is a risk of harm to personnel, the environment or material resources and/or where any non-compliance with any applicable laws or any project related regulation or instruction exists.
- c) The contractor's legal responsibilities and contractual obligations shall not be diminished by any instructions issued by the subcontractor.
- d) Where any conflict arises between one or more subcontractors as to the priority or coordination of works the contractor shall decide based on the protection of personnel, the environment and material resources, and in line with the project requirements. The contractor decision in any such case shall be final. No claims against the contractor can be derived from any action or decision taken by the him with regard to the protection of personnel, the environment or material resources.
- e) During the monthly HSE committees meeting, a best subcontractor performance will be announced and awarded.
- f) Based on the decision of the HSE JV manager and according the criticality of the hazardous situations, an organizational disciplinary action will be implemented against the violated subcontractor. The subcontractor disciplinary action includes withholding of 05% from the monthly invoice for the critical situations. If the subcontractor failed to correct the hazardous situation, the JV will take the required actions and all associated costs will be back charged from the subcontractor.
- g) Regarding the legal actions against the project will be the responsibility of the subcontractor who is responsible of the relevant causes of that legal action (i.e. back to back with the subcontractor).

12.2.2 Subcontractor's Construction and Erection Management

- a) The subcontractor shall submit to the contractor, in writing two weeks prior to commencing work, the names and contact details of the responsible project and site management personnel and its nominated deputies.
- b) The subcontractor shall submit and regularly update an organizational chart of its site management structure, including names, positions and contact details of all of its Site management team members and site supervisors.
- c) The subcontractor site manager is required to be present on site on a full-time basis excepting approved holiday periods or periods of genuine sickness. Other absences from Site must be with the prior approval of the contractor.
- d) The subcontractor's site managers shall not absent themselves from site or delegate its responsibilities during its or its subcontractor's works without the prior approval of the contractor.
- e) The subcontractor shall notify the contractor of any changes to its Site Management structure without delay.
- f) The subcontractor shall ensure that prior to any replacement of key personnel a reasonable period of hand over and work familiarization takes place.
- g) The subcontractor shall allocate a qualified HSE personnel to cover all HSE aspects during the project phases.

12.2.3 Services Performed by Sub-Contractors

- a) Services to be performed by subcontractors are subject to approval by the contractor.
- b) The subcontractor is responsible to ensure that all regulatory and administrative procedures are completed before mobilization to the Site and shall be subjected for inspection by the Contractor.
- c) The contractor is responsible for ensuring its subcontractor(s) comply with all Applicable Laws and Project related instructions.

12.2.4 Sharing of Construction Equipment and Tools between Subcontractors

- a) While the contractor encourages good cooperative relations between the subcontractors and in principle supports mutual-aid arrangements between the contractors shall neither endorse nor approve the sharing of construction equipment and tools.
- b) The contractor shall only make available, lend, borrow or share construction equipment and tools with other subcontractors at the Site where it is lawful to do so, and where:
 - A formal agreement exists between the parties, and;
 - All appropriate documentation and/or approvals according to applicable laws have been fulfilled.
- c) The contractor shall neither accept responsibility nor liability for any damage resulting from the unlawful use of construction equipment and tools by the subcontractors.

12.2.5 Safeguarding against Theft and Loss

- a) The contractor shall accept neither responsibility nor liability for the loss or theft of the subcontractor possessions, material and equipment.
- b) The subcontractor shall take all reasonable precautions against the theft and loss of its own possessions, material and equipment and those supplied for use by the Site Management.
- c) The subcontractor shall be responsible for its own insurance against the theft and loss of its own objects, material and equipment.
- d) The subcontractor shall be responsible for making any formal complaints or reports of loss or theft of the subcontractor possessions, material and equipment to local law enforcement authorities.
- e) The contractor shall reasonably cooperate with any investigation by local law enforcement authorities into the loss or theft of the subcontractor possessions, material and equipment.

12.2.6 Data Protection, Information Security

- a) The subcontractor shall be obliged to handle any data and information made available to it by the contractor within the framework of order execution in accordance with the specified protection of information clause.
- b) The subcontractor shall be obliged to ensure compliance with Applicable Laws in respect of data protection (in particular in the processing of personal-specific data). When data and information are recorded in documents, the confidentiality class shall be indicated on the document pages.
- c) Unauthorized persons shall be prevented from obtaining access to data and information.

12.3 Management of Temporary Personnel

- a) Temporary personnel refer to workers the contractor may employ on a short-term or temporary work contract and/or workers supplied to the contractor by a temporary personnel agency.
- b) The Site Regulations and all other Project related instructions shall apply equally to the contractor's temporary personnel as if they were its own employees.
- c) Temporary personnel shall not be permitted to effect high risk work activities, as per Applicable Laws and these Site Regulations, without the relevant statutory authorizations and the approval of the contractor.
- d) In order to ensure that adequate HSE preparedness of temporary personnel, the contractor shall establish a training/mentor system for every temporary employee which shall consist of:
 - The Contractor's specific, HSE training.
 - Assignment of a mentor to the temporary worker for the first day of work, so that the Contractor can validate their experience and skills;
 - If the temporary worker's experience and skills are not validated, the temporary employee shall not be accepted after the first day.

- e) The Contractor and its subcontractors shall maintain all training records and documentation relevant to temporary personnel at the Site in the same way as for its own personnel

12.4 Working at Height

12.4.1 General Guidelines for Working at height and Fall Protection

- a) The contractor and its subcontractors shall be responsible to ensure that its personnel are protected from the risk of falling from any height by applying the following general guidelines.
- b) The contractor and its subcontractors shall provide training and maintain training records for safe working at height procedures and for the use of any equipment prior to work that enables working at height to its personnel assigned to work at height based on risk assessment and Applicable Laws.
- c) The contractor and its subcontractors shall ensure that all personnel assigned to work at height are physically and medically fit to do so.
- d) Collective fall protection – guard rails, scaffolds, mobile platform ladders, mobile elevating work platforms (MEWP) or Man-Lift, safety nets, etc., has priority over individual fall protection.
- e) When collective fall protection measures are not possible to implement then individual protection, such as a safety harness and life-lines, etc., is compulsory.
- f) Safe access to all work stations at height must be assured.
- g) No person is obliged to place themselves at risk of falling; they retain the right to withdraw from any situation, without prejudice, where the risk of falling exists.

12.4.2 Individual Fall Protection

- a) Individual fall protection shall only be employed when collective fall protection is impossible or impracticable to be installed.
- b) The contractor and its subcontractors shall be responsible to ensure that where individual fall protection equipment, such as safety harnesses, retractable inertia reels or stop-chutes, lanyards, life lines, etc., are used within its scope of works, the following conditions are applied:
 - The contractor and its subcontractors shall ensure Its Personnel assigned to work at height receive prior theoretical and practical training for the correct and safe use of individual fall protection equipment. Records of this training shall be maintained at the Site.
 - The contractor and its subcontractors shall select individual fall protection equipment based on risk assessment and it shall only be used and stored in accordance with the manufacturer's instructions, applicable laws and standards.
 - All individual fall protection equipment shall be of professional quality and maintained in serviceable condition in accordance manufactures instructions, Applicable Laws and standards with up to date verification documentation available at the Site.
 - The contractor and its subcontractors shall be responsible to ensure the provision of certified anchor and/or attachment points for individual fall protection equipment that have a load capacity commensurate with the application and according to the manufacturer's specifications.
 - In principle, an anchor and/or attachment point/s for individual fall protection equipment shall provide for a load capacity of no less than 5000 pounds /person.
 - To enable secure transfer between multiple anchor and attachment points at height a double lanyard, i.e., two attachment cords, in conjunction with a safety harness shall be used.
 - At heights equal to or greater than three (3) meters shock absorbing lanyards shall be employed these must be blocked out at heights below three (3) meters.
 - Shock absorbing lanyards shall not be extendable to a length greater than the height at which the work is taking place.

- Safety lines and life lines may be considered for use provided that they are installed by a competent certified person and verified by an accredited third-party expert.
- The contractor and its subcontractors shall formulate a rescue plan to recover suspended personnel in case of a fall while wearing a safety harness, prior to commencing the work. The plan shall ensure that rescue takes place rapidly to minimize the dangers of suspension trauma and loss of consciousness. Even though self-rescue may be possible or even probable, workers using a safety harness shall be supervised at all times.
- The rescue plan for suspended personnel shall be included in the contractor's Emergency Plan.

12.4.3 Ladders

- a) Ladders are a means of access between two different elevations only and are not generally considered to be a work station, and may only be used strictly adhering to the following requirements:
 - Ladders shall be of professional purpose-built construction and conform to all Applicable Laws and standards.
 - Ladders shall be inspected before each use and in case of deformity, damage or missing parts be removed immediately from use.
 - The use of free-standing step-ladders is strictly prohibited at the Site.
 - Ladders shall be placed on a solid surface and kept stable by a second person, before they are properly fixed and during removal.
 - Ladders shall be solidly fixed at an angle of approximately 75°, secured at the top and base (in at least three points, in order to avoid possible rotation) without impeding the ascent and descent.
 - Ladders shall extend a minimum of one (1.1) meter beyond the top of step-off point.
 - The maximum length of a ladder shall not be more than six (6) meters.
 - Ladders shall only be used as a work station for non-repetitive tasks of short duration. The risk should be analyzed and stated in the MSRA.
- b) In exceptional circumstances, where other collective fall protection measures are not possible or impractical to implement, a ladder may be considered for use as a work station, after consultation with the contractor, and provided that it can be fully and safely secured and used in conjunction with individual fall protection this activity will then be considered a high-risk work activity and be subject to a PTW.

12.4.4 Guard Rails

- a) The contractor and its subcontractors shall install guard rails (or any other suitable means), when required, that comply with the following stipulations:
 - Be integrated or fixed in a manner that is secure, rigid and appropriately resistant.
 - Incorporate an upper rail between 1m and 1m10.
 - Incorporate an intermediate rail at mid height.
 - Incorporate a kick-board of 10 to 15cm if the circumstances require.
 - Guard rails may be substituted by any other suitable means which provide equivalent protection.

12.5 Scaffolding

12.5.1 Fixed Scaffolds

- a) The Contractor shall adopt alternative measures where a scaffold is deemed to increase the potential risks to the safety of its users, other Site personnel or Site installations.

- b) The contractor and its subcontractors shall only install fixed scaffolds with methods and materials that conform to either the European Standards (EN) or the OSHA Standards (for construction industry).

General

- a) Scaffold material, structures and erection methodologies shall conform to applicable laws and either the European standards (EN) or the OSHA Standards.
- b) The scaffold manufacturer's specifications shall be respected at all times for the erection and use of the scaffold material.
- c) It is not permitted to mix scaffold material from two or more different manufacturers or systems without written approval of the contractor.
- d) All materials used in the construction of scaffolds shall be free from defects and/or damage and inspected in accordance with applicable laws, standards and the scaffold manufacturer's specifications.
- e) Defective or damaged scaffold material shall be immediately put out-of-service and removed from the Site.
- f) Scaffolds are intended only as a work platform and must not be used for long term storage and/or supporting other structures.
- g) Work surface planks shall be regularly cleared of rubbish, waste and surplus building material.
- h) In the case of a scaffold which is less than or equal to twenty-four (24) meters in height, and is of a standard construction and function which conforms to the manufacturer's specifications and standard assembly plan, it is not necessary to provide a separate calculation sheet – the manufacturer's specifications and standard assembly plans shall be permanently available on Site. However, where any doubt exists as to the stability and function of the scaffold, the scaffold constructor shall supply a detailed assembly plan and calculation sheet before the scaffold will be approved for use.
- i) In the case of a scaffold which is more than twenty-four (24) meters high, or constructed in a non-standard configuration e.g. shoring scaffolds, scaffolds, truss out scaffold, retention scaffolds, complex loading bays slung/suspended scaffolds, lifting gantries and towers, system scaffolds outside of manufactures guidance, a detailed assembly plan and calculation sheet of the scaffold shall be provided for review to the contractor by the subcontractor to justify its stability and function prior to its erection.
- j) The planks comprising the scaffold work surface shall be correctly supported and be fixed in accordance with the manufacturer's fixing system and specifications.
- k) Scaffolds shall have a safety guard rail around its external sides comprising an upper rail located at a height of one (1) meter, an intermediate rail located at a height of 45 cm and a toe-board (15) cm in height from the work surface.
- l) Where a scaffold is placed next to a structure and does not have safety guard rails between the scaffold and the structure, the gap between the structure and the work surface must not exceed twenty (20) cm.
- m) When the scaffold is constructed along a wall or any other structure which does not extend beyond the work surface level by at least ninety (90) cm, a safety guard rail or any other equivalent anti-fall device must be installed on the opposite side of the wall or structure.
- n) A safe means of accessing the work surfaces (ladder, stairs, walkway, etc.) shall be provided in accordance with the manufacturer's specifications and conform to Applicable Laws.

- o) Access ladders shall be solidly fixed at an angle of approximately seventy-five (75°), secured at the top and base without impeding its safe ascent and descent. Vertical ladders may only be used with the approval of the site management.
- p) External access ladders may only be employed to access the first level of the scaffold from ground level to a maximum height of two (2) meters. The step-off point from the ladder to the work surface shall be protected by a self-closing gate.
- q) All accesses to levels of the scaffold over two (2) meters from the ground level shall be internal.
- r) Access ways through the scaffold work surfaces shall be protected with self-closing trap-doors or gates. Other protection options may be approved at the discretion of the site management.

Assembly, dismantling and modification

- a) Scaffolds shall only be assembled, dismantled and modified by competent persons from the contractor with appropriate training and certification.
- b) During the assembly and dismantling of scaffolds the work area must be clearly identified by signs and barriers.
- c) Signs marked with "Access Prohibited" shall be clearly displayed at all potential access points to avoid unauthorized use of the scaffold during its construction, disassembly, and modification and before it has been approved for use.
- d) Scaffolds shall be stable and be supported by hard-wood treads or other appropriate means.
- e) Access ladders and stairways must be installed during the construction process to minimize the need for the scaffolders to climb up the scaffolding components.
- f) The planks/decking, guard rails and kick-boards must be put in position as each working level is completed.
- g) Where required, scaffolds shall be anchored and secured during the assembly process. All components shall be anchored as soon as the structure reaches the points specified in the scaffold construction plan and/or calculation sheet.

Scaffold Inspections

- a) Scaffold inspections shall only be performed by competent persons certified by an appropriate level of training and formally authorized by their employer to perform scaffold inspections.
- b) Initial Inspection:
 - Conducted by an authorized and competent scaffold inspector from the scaffold contractor, together with an authorized and competent representative of the contractor, after completion of the erection and before the first use.
 - When the scaffold meets the specification of the Contractor and is approved by both parties for adequacy, then a green "Scaff-Tag" shall be installed in front of all access points which identifies the following:
 - The scaffold constructor;
 - The scaffold identification number;
 - The Contractor responsible for the scaffold;
 - The scaffold class category, and;
 - The maximum charge capacity Kg /m²;
 - Any other contractors that are authorized to use the scaffold,
 - And; is duly signed and dated by both parties.

- c) Daily verification:
 - The Contractor and its subcontractor personnel assigned to work on scaffolds shall be trained in the correct use and conservation of scaffolds.
 - The Contractor and its subcontractor supervisors assigned to work on scaffolds shall visually check scaffolds for stability and completeness before use.
 - Where anomalies are identified, the contractor and its subcontractor personnel assigned to work on scaffolds shall immediately remove the "Scaff-Tag" and report the anomalies to their supervisor or the scaffold contractor.
 - The scaffold shall not be used again until the rectification has been made and re-verification by authorized and competent scaffold inspector from the scaffold contractor, together with an authorized and competent representative of the contractor.
- d) Weekly inspection:
 - Conducted by the authorized and competent representative of the contractor and its subcontractor.
 - The "Scaff-Tag" shall be updated and signed by the authorized and competent representative of the Contractor.
- e) Extra-ordinary inspection:
 - Conducted by an authorized and competent scaffold inspector from the scaffold contractor, together with an authorized and competent representative of the Contractor and its subcontractor after storms, high winds, and significant modification or if the scaffold has not been used for one month.
 - After such an inspection the "Scaff-Tag" shall be reissued.

12.5.2 Rolling Scaffolds and Secure Mobile Platform Ladders

- a) The subcontractor shall only use rolling scaffolds and secure mobile platform ladders for its scope of works that conform to the following regulations:
 - All rolling scaffolds and secure mobile platform ladders shall conform to applicable laws and standards.
 - Each rolling scaffolds and secure mobile platform ladder shall be clearly and permanently marked with the contractor's name.
 - Rolling scaffolds and secure mobile platform ladders shall be assembled and used in accordance with the manufacturer's instructions/notice.
 - A copy of manufacturer's instructions/notice for rolling scaffolds and secure mobile platform ladders shall be immediately available for verification purposes and an instruction shall be communicated to the personnel via the TBTs.
 - The inspection regime for rolling scaffolds shall be the same as for fixed scaffolds.
 - The maximum allowable height for a rolling scaffold is twelve (12m) on the inside of a building and eight (8m) on the exterior.
- b) The scaffold's wheel brakes must be in the engaged position while the scaffold is in use.
- c) It is strictly forbidden for personnel to remain on the scaffold while it is being repositioned or moved.

12.5.3 Hanging, flying or suspended scaffolds

- a) The subcontractor shall only use hanging, flying or suspended scaffolds for its scope of works with the express written approval of the Contractor.
- b) Hanging, flying or suspended scaffolds shall:
 - Conform to all Applicable Laws and standards pertaining to its installation and use.
 - Only be erected, modified and dismantled by competent certified personnel.
 - Be attached to points that have been verified by a static calculation and approved by the contractor.
 - Be inspected and certified by an accredited third-party expert prior to use.

- Only be used and operated by trained competent personnel.
- c) The inspection regime shall be the same as for fixed scaffolds.
- d) All conformity and training documentation relating to this section shall be available at the Site.

12.6 Crane and Lifting Operations

12.6.1 General

- a) The contractor and its subcontractors shall be responsible to ensure that all cranes and lifting operations conducted within its scope of works are done in accordance with the Site Regulations and Applicable Laws.
- b) All safety devices, lifting appliances (machinery) and lifting gear (equipment) shall be inspected and certified by an accredited third-party expert and maintained in good working order. Records of such inspections and maintenance shall be kept by the contractor and its subcontractors.
- c) The crane driver/operator shall be fully qualified for the machine in question. All original qualification documents shall be available with the operator/driver.
- d) All lifting equipment, slings, chains, hooks, cables and lifting gear shall have valid certification from and accredited 3rd party/conformity documents available at the Site.
- e) The contractor and its subcontractors shall provide a trained rigger who shall coordinate the lifting operation and provide signals to the crane operator.
- f) The banksman / rigger shall be clearly identifiable, for example by a different colored vest.
- g) The crane driver / operator shall ensure that the crane and all equipment, slings, chains, hooks, lifting gear are in serviceable condition prior to lifting operation(s).
- h) The banksman shall ensure that all equipment, slings, chains, hooks, lifting gear remain in serviceable condition during the lifting operation/s.
- i) Direct verbal and/or standard international hand signals and/or radio communication between the crane driver / operator and banksman shall be used.
- j) Cranes shall be fitted with an audible warning signal / horn / whistle for alerting personnel in the vicinity prior to and during a lifting operation.

12.6.2 Lifting Operations' Safety Procedures

- a) The contractor and its subcontractors shall be responsible to ensure that the following safety procedures are permanently applied for all crane/lifting operations
 - Cranes shall always be maneuvered slowly in all work areas.
 - There shall always be a person guiding the driver while reversing and/or positioning the crane.
 - Ground plates or outrigger support pads shall be employed at all times beneath the stabilizers.
 - The work/lifting area of all cranes in operation shall be clearly cordoned-off with rigid barriers and warning signs. Warning tape will only be permitted with the prior approval from the Site Management.
 - Access the lifting area shall be restricted to authorized personnel only. A security watch on lifting area to prevent unauthorized shall be employed where necessary.
 - The security measures shall ensure that personnel cannot pass directly next to a crane or pass beneath the counter weight or under a suspended load.
 - Loads shall never be passed over the heads of other workers, vehicles or occupied structures.
 - Audible warning signals or whistles shall be used to alert personnel of suspended loads and lifting operations in their proximity.
 - The use of guy (or guide) ropes is mandatory for all loads.
 - Safety distance from high voltage overhead lines, live conductors and/or other equipment shall be respected.

- Slings, chains, cables, hooks, etc. shall be inspected for damage on a regular basis and immediately removed from service and the Site when found to be faulty.
- Heavy/complex lifts of >10t and/or of large dimension or tandem lifts shall be considered as high-risk activities, and as defined in section 2.5, only executed once a valid PTW from the Contractor.

NOTE: as part of the PTW application a Lifting plan must be submitted for approval.

12.6.3 Crane Safety Devices

- a) The contractor and its subcontractors shall ensure that the following safety devices are fitted where necessary to cranes.
 - An automatic safe load indicator shall be required on certain jib cranes to give warning of an approach the safe working load and a further warning when an overload occurs. The warning should be clearly evident to the operator.
 - A load radius indicator shall be required on jib cranes having variable safe working loads according to the radius at which they are operated. It shall be clearly visible to the operator and indicate accurately the safe working load and radius for whatever configuration of the crane is used.
 - Where motion limit devices are fitted to limit hoisting, derricking, travelling, slewing, traversing, climbing or any other crane motion, they shall be regularly inspected and maintained in good working order.
 - Overload cut out devices: Switches or other devices may be fitted to cut out crane motions when the crane is in an overload situation. This shall not be achieved by stopping the prime mover. Only motions that permit the crane to be returned to a safe condition shall remain operative. The devices shall be maintained in good working order.
 - Mechanical and/or electrical rotation and trolley limiting devices shall be installed on tower cranes where the risk of interference and or collision with other cranes, buildings, overhead power lines and the like exists.
- b) The above list is not exhaustive; other devices such as level indicators, anemometer and machinery guarding may be fitted and should be used in according with the manufacturer's recommendations.
- c) It is strictly forbidden to over-ride, by-pass or otherwise interfere with an installed safety device except in the case of extreme emergency.

12.7 Construction Heavy Equipment

- a) The contractor and its subcontractors shall be responsible to ensure that all forklifts, excavators and other construction Site vehicles conform to the following regulations:
 - All vehicles shall have a valid vehicle entry pass, issued by the contractor clearly displayed prior to entering the Site this will be issued following inspection of the vehicle and associated documentation.
 - All vehicles shall have the contractor's name clearly and permanently displayed.
 - Pre-start checks must be performed on all vehicles prior to every use, more detailed inspections to be conducted periodically (minimally in quarterly basis)
 - During the movement of all vehicles on the Site, pedestrians always have priority of passage.
 - All vehicles shall display flashing lights (warning lights or gyro fare) while in motion.
 - Large vehicles: trucks, mobile cranes and the like shall employ a banksman to guide it while reversing and movement.
 - All vehicles shall obey the traffic signs where displayed on Site. According to Site progress and activities the site management may alter circulation conditions and/or vehicle access. Site Notes will be issued by the contractor advising all Site personnel of any changes to circulation conditions and/or vehicle access.

- No person may drive a vehicle on Site unless they have a valid driving license, a valid certificate of competence for the vehicle type to drive that vehicle. These documents shall be immediately available on request.
- All vehicles shall have valid registration and insurance, with all justification documents immediately available.
- All vehicles shall have valid technical validation certificates, emblems and stickers in accordance with Applicable Laws for that vehicle type.
- The use of mobile telephones, walkie-talkies and smoking or eating while driving is prohibited.
- Maintenance works on systems or parts of vehicles that could lead to environmental contamination is prohibited on Site (e.g. motor oil or hydraulic oil exchange).
- Any emergency service or breakdown repair to vehicles may be performed on Site with the authorization of the Site Management.

12.8 Excavations and Underground Services

- a) Excavations shall include but not be limited to the digging of holes, ditches and trenches, and the boring, drilling and driving of objects into the soil.
- b) Underground services generally refer, but is not limited to, underground electrical cables, water mains and pipes, sewage and storm water drainage pipes, telephone and communication cables and gas supply lines.
- c) In order to protect underground services, site personnel, the environment and Site installations, no excavation works shall be performed without a valid PTW issued by the contractor.
- d) Excavation works may also be subject to approval from competent authorities in accordance with applicable laws.
- e) where the installation of underground services, temporary or permanent, are within the contractor's scope of works, the contractor is responsible for installing protection measures such as:
 - The minimum depth of temporary services shall not be less than (40) cm.
 - The minimum depth of permanent services shall be as specified on the respective plan.
 - Underground services shall be laid upon and covered by suitable bedding sand according to Applicable Laws.
 - Color-coded warning tape to identify the underground service (according to Applicable Laws and standards) shall be laid upon the sand cover before final back-filling.
 - Visual marking or indicator posts may also be required by the contractor and/or Applicable Laws.
- f) Excavation zones shall be signalized at all times by the contractor and its subcontractors responsible for the Work with rigid barriers to prevent unauthorized or inadvertent entry by third parties.
- g) Open excavations shall be protected at all times by the contractor responsible for the work with rigid barriers to protect Site personnel from the risk of falling in.
- h) The use of plastic warning tape, plastic netting and like is not permitted around excavation zones and open excavations, except in exceptional circumstances where the contractor has specifically approved its use.
- i) The contractor and its subcontractors responsible for the work shall ensure that excavations ≥ 120 cm in depth shall be protected from collapse/cave-in by purpose built shuttering or shoring, or by sloping/battering the excavation walls to a suitable angle according to applicable laws and standards.
- j) The contractor and its subcontractors responsible for the excavation work shall provide secure access to excavations comprising of steps or ramps fitted with hand-rails. Ladders may only be used where minimal access is required.

- k) The contractor and his subcontractors responsible for the work shall ensure that workers are protected against the risk of injury from protruding or exposed steel bar ends during concrete reinforcement works by rebar safety caps or other suitable means.
- l) The contractor and its subcontractors responsible for the excavation work shall provide suitable pumping equipment to remove water from excavations.

12.9 Hot Works

- Hot works are subject to the PTW procedure that include specific control measures shall be identified into the Hot Works PTW, in addition to identify any required preparation or additional controls to the activities. The hot work PTW shall be aligned with the job specific MSRA and a verification will be conducted before work commencement. In general, the hot work PTW shall consider the following, but not limited, control measures;
 - a) Hot works shall be included in specific MSRA to ensure that the work activities are communicated and the work plan is confirmed as well as the suitable control measures are identified by the job involved parties.
 - b) The workplace shall be clean and free of combustible materials, in addition put in place special measures to control all near combustible material storage within 15 meters.
 - c) The workplace area shall be barricaded, isolated and ensure provision of suitable signs based on required information to be communicated about the hot works hazards and associated risks.
 - d) Ensure that a suitable fire extinguisher is available at each hot work location.
 - e) Ensure that falling and flying sparks are contained and site equipment is protected by the use of fire-resistant screens and/or mats. In addition, ensure that protective screens are installed to prevent welding flash injuries to Site personnel.
 - f) Mobile fuel gas supply facilities shall be set up at the workplace or as near to it as practicable, and should where possible be in the employee's field of vision, without creating any supplementary risks.
 - g) Gas cylinders and welding equipment must be accompanied by conformity and certification documents and/or labels.
 - h) Acetylene and other fuel gas supply facilities must be safeguarded against flashback.
 - i) All gas cylinders, full or empty, shall be secured in the upright position without risk of falling over.
 - j) Empty gas cylinders shall be removed from the work area as soon as practicable.
 - k) The contractor and its subcontractors shall ensure that in the case of electric welding, strict attention must be paid to ensure that the earth clamp is connected to the object to be welded at a point as near as practicable to the weld and never be connected to any other component parts.
 - l) When electric arc welding or oxygen-arc cutting is performed in locals where the walls or sides can conduct electricity, and conditions are cramped and mobility limited, the contractor and its subcontractors shall ensure that DC welding generator sets with no-load voltages not exceeding 100 V may only be used. AC welding generator sets are only permissible when their no-load voltage, for frequencies up to 50 Hz, does not exceed 42 V (42 V marking). Welding rectifiers may only be used if they bear the appropriate identification mark.

12.10 Work in Confined Spaces

- a) Spaces that may be considered as “confined” may include, but are not limited to, underground vaults, tanks, storage bins, pit’s and diked areas, vessels, sewers, wells, silos and the like.
- b) For a space to be considered “confined” it shall meet all of the following three criteria:
 - Is large enough for an employee to enter fully and perform the assigned work;
 - Is not designed for continuous occupancy by the employee; and
 - Has a limited or restricted means of entry or exit.

- c) By definition, a PTW-required confined space has one or more of the following characteristics:
 - Contains or has the potential to contain a hazardous atmosphere;
 - Contains a material with the potential to engulf someone who enters the space;
 - Has an internal configuration that might cause an entrant to be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross section;
 - And/or contains any other recognized serious safety or health hazards.
- d) The contractor and its subcontractors shall conduct all work in confined spaces in accordance with the Site Regulations and applicable laws.
- e) The Contractor is responsible for the provision of confined space rescue equipment required for the emergency rescue of personnel in confined spaces.
- f) All identified confined spaces shall be posted with a warning sign: “Warning: Confined Space. Entry Only with a Valid Permit to Work” at all times.
- g) Where permanent monitoring of air quality and/or explosiveness is required within a confined space, the Contractor and its subcontractors shall provide such equipment to do so at its own expense. Preference shall be given to providing portable metering devices to each worker exposed to a potential risk.
- h) All confined spaces “not in use” shall be protected from unauthorized entry by physical means.

12.11 Platforms, Gratings and Hand-Rails

- a) The removal, replacement or modification of temporary coverings, gratings and handrails on platforms or mezzanines is considered to be high risk is subject to a valid PTW.
- b) The contractor and its subcontractors are responsible for the erection of platforms shall ensure that warning signs and barriers are in place to prevent unauthorized or inadvertent entry until such time as they are released for subsequent works.
- c) Newly erected platforms will not be released for subsequent works until all fall risks have been secured and temporary coverings securely fixed by the contractor responsible for the erection.
- d) Upon the completion of platforms and their release for subsequent works, a PTW shall apply where the Contractor shall be required to remove or replace (in part or fully) or modify temporary coverings, gratings, handrails, steelwork and open end of platforms etc. within its scope of works in any work area.
- e) The application for a PTW shall be the responsibility of the Contractor and its subcontractors in accordance with the PTW Procedure.
- f) The contractor and its subcontractors shall be responsible for ensuring, at its own expense, that all safety measures are permanently in place for the duration of the PTW.
- g) At no stage shall a work area be left exposed to any fall risk, i.e. removed handrails and coverings shall be immediately replaced by rigid guardrails or re-secured with a temporary covering.
- h) Minimum standards for temporary handrails and coverings as follows:
 - Horizontal openings $\leq 1,0\text{m} \times 1,0\text{m}$ shall be covered and visually highlighted (e.g. fluorescent spray paint).
 - Temporary coverings shall have equal loading capacity as the surrounding area. (I.e. 5kN/m^2 for openings in gratings) to be achieved by an appropriate plate thickness of wood or steel.
 - Temporary coverings shall have sufficient overlap - it must not be possible for the covering to fall into the opening that it is protecting.
 - Coverings shall be securely fixed and prevented from sliding and inadvertent removal.
 - Horizontal Openings $> 1,0\text{m} \times 1,0\text{m}$ and open ends of platforms or breaks in handrails etc., shall be fully protected with a rigid guardrail.

- Temporary rigid guardrails shall be constructed from materials specifically intended for that purpose, i.e. scaffold material or a purpose built fall protection system.
- Temporary rigid guardrails shall consist of an upper rail of 1m, an intermediate rail and where deemed necessary a kickboard of 15cm.
- Temporary rigid guardrails shall not themselves create supplementary risks to workers, i.e. tripping hazards, exposed sharp edges or nails, etc.

12.12 Housekeeping

12.12.1 General

- a) Housekeeping is the general term referring to the cleanliness tidiness and general organization of work areas, and the treatment of all waste materials, with the view to ensuring safe and healthy work conditions for Site personnel, for the protection of the environment and material resources, and to maximize the efficiency and quality of the work.
- b) The work area refers to the area in which the contractor and its subcontractors is working such as workshop, preparation areas, the lay down and storage areas and the site facilities and sanitary facilities.

12.12.2 Housekeeping Responsibilities

- a) The contractor and its subcontractors shall be responsible for the housekeeping in its work areas and shall ensure:
 - That its personnel have safe, unencumbered access to and from the contractor and its subcontractors work areas at all times;
 - That work areas are clean, safe, well organized and tidy and promote the good health and well-being of Site personnel and provide protection for the environment;
 - That sufficient numbers of suitable bins and/or containers are provided for the separation, recycling, treatment and disposal of waste,
 - That waste, rubbish, packing material and surplus building material is not allowed to accumulate and is systematically removed from the work area, is disposed of appropriately and removed from the Site in accordance with Applicable Laws;
 - That material at lay down and storage areas are well organized, are clearly and permanently identified and do not create supplementary hazards to Site personnel;
 - That all hazardous materials are stored, handled, used and disposed of in accordance with Applicable Laws and the MSDS;
 - That any spillage, leak or uncontrolled release of hazardous material is immediately reported to the Contractor and that remedial and clean-up action, in compliance with Applicable Laws, is taken with the shortest possible delay;
 - That Site facilities, are kept clean and promote the good health, hygiene and well-being of personnel and provide protection for the environment;
 - That at the completion of works and before demobilization from the Site all work areas are clean and devoid of any waste, rubbish or surplus building materials.

12.12.3 Housekeeping Procedures

- a) The contractor and its subcontractors shall integrate housekeeping procedures, in accordance with its responsibilities, into its general work planning schedule.
- b) The standard of housekeeping will be regularly assessed by the contractor.
- c) The contractor reserves the right to stop the subcontractor's work at any time as a result of poor housekeeping, until such time that a satisfactory standard, in accordance with the subcontractor

responsibilities has been re-established. Any costs arising from such action, including work delays and subsequent penalties will be incurred by the defaulting subcontractor.

- d) The contractor reserves the right to take any action deemed necessary to re-establish an acceptable standard of housekeeping. Any costs arising from such action, including labor, equipment, cleaning, removal of waste and rubbish, work delays and subsequent penalties will be incurred by the defaulting subcontractor.
- e) In work areas where multiple subcontractors are working and where there exists a disagreement as to the responsibility for any housekeeping issue, the subcontractor will, in the first instance, seek to resolve the situation through dialogue with the involved parties. Should a resolution not be forthcoming, the contractor reserves the right to take any action deemed necessary to re-establish an acceptable standard of housekeeping. Any costs arising from such action, including labor, equipment, cleaning, removal of waste and rubbish, work delays and subsequent penalties will be incurred proportionally by the defaulting subcontractor/s involved as determined by the contractor.

12.13 Electrical Safety

12.13.1 General

- All electrical works shall be performed by qualified persons who shall be provided with adequate and necessary Internal specific trainings on Electrical Safety and Precautions and PTW/ LOTO system and other relevant trainings as per project HSE training matrix which will be developed during the mobilization and execution phase.
- Training shall be provided to each affected employee:
 - a. Before the employee is provided with the first assignment on Site;
 - b. Whenever there is a change in the activity or equipment that presents a hazard about which an employee has not previously been trained; and
 - c. Whenever the contractor/ sub-contractor has reason to believe either that there are deviations from the Electrical Safety procedure or that there are inadequacies in the employee's knowledge of the procedures.
- Electrically skilled person: Person with relevant education and experience to enable him to perceive risks and to avoid hazards which electricity can create.
- The Contractor and its subcontractors shall only employ electrically skilled personnel for all work on their distribution system. Documentation of the training must be able to be provided upon request.
- The Contractor and its subcontractors shall ensure that electrical systems and components are installed, modified, operated and maintained only by electrically skilled personnel.
- The Contractor and its subcontractors shall indicate in writing the individual names of electrically skilled personnel responsible for the area of responsibility (the nominated person in control of the electrical installation).
- Reference is made to EN 50110-1, IEC 60050-826 (International Electrotechnical Vocabulary - Part 826: Electrical installations) and (Guideline for Assessing the Competence of Electrically Skilled Persons).
- Contractor is authorized to designate competent person to undertake testing and, where appropriate, how to access a test area and who should not enter the area.
- Contractor to establish centralized command for installing the temporary power supply distribution boards for all subcontractors within the project.
- Temporary power supplying routes shall be identified for all high and low voltage routes, temporary sub-stations (pocket substation) and lighting towers. All the cable routes in crossing roads shall be protected with armor cable before burying.

- The electrical hazards include but not limited to:
 - a. Electrical Shock
 - b. Burns
 - c. Arc-Blasts
 - d. Fires and Explosions (explosion caused by unsuitable electrical apparatus or static electricity igniting flammable vapors or dusts, for example in a spray paint booth
 - e. Electric shocks can also lead to other types of injury, for example by causing fall from height, ladders or scaffolds etc.
- All electrical wiring and installations shall conform to the provisions and requirements of legal and international requirements and standards such as NFPA 70E, IEC, etc.
- All electrical works shall be performed by qualified persons who shall be provided with adequate trainings and necessary personal protective equipment.
- Prior to maintenance operations on any electrical equipment or appliances, the electrical current shall be disconnected, (lockout and tag out) “Refer to PTW Procedure” with a lock or any other adequate means and tagged out to ensure the prevention of reenergizing of the equipment by any person during work.
- No electrical equipment shall be put into use where its strength and capability may be exceeded in such a way as may give rise to Danger.
- Employees working near electrical circuits shall not wear trinkets, rings, watches and jewelry.
- Approved explosion proof electrical lighting shall be the only means used for artificial illumination in areas where flammable liquids or gases are present and creating a potential explosion hazard.
- Employees working in electricity shall be instructed in using the proper fire extinguishers in electrical fires such as CO2 extinguishers. Water or extinguishers containing water shall not be used in extinguishing electrical fires which occur in electrical equipment or conductors as water is a good conductor which causes electrical shocks for the person using the extinguisher.
- Metal ladders or non-insulated hand tools shall not be used while working in electrical installations. (Handles of all hand tools used shall be insulated and wooden or fiberglass-coated ladders shall be used).
- Fixed and mobile electrical appliances and equipment shall be grounded by means of non-current carrying wire. When a short circuit occurs and a live wire permits a high fault-current flow to the frame or cover of an equipment or machine, the circuit breaker or fuse shall be tripped to interrupt the current and disconnect the electrical circuit or ground wire carries the current to ground and prevent the current traveling through human body to the ground. The ground conductor shall be continuously checked by using Ohm Meter.
- When the fuse or circuit breaker disconnect the electrical circuit, electrical current shall not be re-connected before inspecting the cause of the fault and repair it and thus replace the fuse with other fuse of the same rating or the circuit breaker shall be returned to its first position by a qualified employee.
- Electrical circuit shall not be overloaded to prevent occurrence of fires.
- Electrical wires shall not be passed through doors or windows and shall be kept away from heating sources such as heaters and shall not be hung from nails to prevent the damage or wearing of the insulating material.
- Defective or corroded electrical wires shall not be used and shall be immediately replaced.

- In case a person receives an electrical shock, this person shall not be touched, first, disconnect the power and remove the injured person away using a piece of wood or any other insulated material, and then, first aid shall be provided to the injured person such as Cardiopulmonary Resuscitation (CPR). Medical Staff shall be informed immediately or the injured person shall be taken to the nearest hospital.
- When recharging batteries, employees shall be instructed not to touch the battery liquids, and shall be provided with adequate and suitable personal protective equipment when doing that (Face shield, rubber gloves, aprons) and when refilling batteries by acid, acid shall be added to water (and not water to acid), in case any burns by the effects of acids occurred, immediately Flush with lukewarm, gently flowing water for 30 minutes. Halogen light shall not be used in confined space and near any combustible materials.
- Domestic socket shall not be used anywhere in the site and it shall be replaced with industrial socket.

12.13.2 Electrical System and Work Activities

- All electrical systems and circuit shall at all times be designed, constructed, operated, inspected, tested and maintained in accordance with applicable local and International standards.
- Every work activity, including operation, use and maintenance of an electrical system and work near an electrical system, shall be carried out in such a manner as not to give rise to danger.
- Contractor/ sub-contractor shall ensure that specific precautions are implemented for electrical work in known or potentially explosive environment. These shall include as a minimum:
- Only electrical and non-electrical equipment and installations designed for such service are used (ex-rated);
- Equipment is specifically identified, assessed and marked as suitable in accordance with International Standard, such as ATEX;
- Equipment is maintained in accordance with International Standards to ensure its continued suitability and certification is maintained.
- Gas monitoring shall be deployed before and during work to detect the presence of potentially explosive atmosphere and;
- Appropriate emergency response provisions are identified and implemented throughout the duration of work.
- Any equipment provided for protecting persons at work on or near electrical equipment shall be appropriate for the use and shall be maintained.

12.13.3 Site Power Connection

- Worksite distribution boards shall be connected permanently and only to the designated sub or main distribution boards. Power supply through outlets is not allowable.
- Subcontractors shall submit requests for their site power requirements to the Contractor site management in good time (approx. two (2) weeks in advance). The request shall include exact data on the purpose, connected load, number of WDB, their locations and the required time frame. The Site Management will assign the supplier SDB outputs in corresponding number and load and taking into consideration the relevant local conditions.
- Contractor and its subcontractors shall install the cables from the WDB to the SDB. The cross sections of these cables shall be selected in accordance with operational current of the circuit breakers in the SDB, voltage drop and loop impedance.
- The Site Power system up to the SDB shall be installed and operated by the contractor. The WDB, including connecting cables shall be provided and installed by each subcontractor under the guidance of the Contractor.

- Type of cables, required accessories prior to connect to the SDB, shall be subject to inspection and approval from the Contractor.
- If the cable routing shall be underground (only armored cables) appropriate depth to be acquired and shall be updated in the as built of cable routing and if above ground shall be minimum 2.2 meters at height with appropriate way to secure the same.
- Each subcontractor shall install a meter for measurement of individual power consumption.
- If no site power supply system is available, the contractor and its subcontractors shall install their power supply system by means of generating sets:
 - a. Generating sets of up to 15 kVA are suitable for supplying one or more individual items of equipment. Protection against indirect contact on generators is mandatory (e.g. by providing generating sets with electrical separation). If two faults occur, the mains must be disconnected within 0.2 seconds or, in the case of a short circuit to frame, the voltage between the generator terminals must drop to ≤ 50 V at any point.
 - b. On the generator the Earthing contacts of the socket outlets are linked with the generator by equipotential bonding conductors. When using these generators, it must be ensured that the total length of connected cable is limited to 100,000Vm (for 230 V = 435 m) and that a total length of 500 m is not exceeded.
 - c. Furthermore, all exposed conductive parts of the equipment must be linked with the generator by protective conductors.
 - d. Generating sets of over 15 kVA are used for supplying construction sites, laydown areas, accommodations areas, stores, worker camps, etc. Electrical separation as protective measure is not applied here. Shock protection must be provided in the electrical system up to the last distribution board before the load (e.g. work distribution board) by fuses and after that by RCDs.
 - e. The Earthing Resistance R of the functional earth system must not exceed 2 Ω .
- Before any operations or works at site commences and during work progresses, the contractor/ subcontractor shall take all practicable steps to prevent danger to persons employed from any live electric cable or apparatus.
- Necessary protective devices such as earth leakage circuit breakers (ELCB) shall be provided in the electrical circuit to avoid risks of electrical shocks.
- Electrical equipment and apparatuses shall be so installed as to make nameplates and markings affixed on them can be examined without removing the installed equipment from a hardware position.
- All fuses and circuit breakers in the electrical panel shall be clearly marked and labeled in lieu to their connected apparatuses as to facilitate recognizing each equipment's fuses or circuit breakers.
- In wet surroundings, unsuitable equipment can become live and make its surroundings live too. Fuses, circuit-breakers and other devices must be correctly rated for the circuit they protect. Isolators and fuse-box cases should be kept closed and, if possible, locked.
- Cables, plugs, sockets and fittings must be robust enough fit for industrial use and adequately protected for the working environment. Ensure that machinery has an accessible switch or isolator to cut off the power quickly in an emergency.

12.13.4 Temporary Cable Management/ Electrical Extensions and supplies

- All temporary electric wiring shall be installed and protected so that the wiring cannot be damaged by traffic movement or sharp objects and should not touch to steel structure. Use an insulated hanger for overhead installation, avoid cable on access area and avoid cable tie-in with metallic wire.
- Try to keep passageways clear from cables/ hoses to minimize trip hazards. Use cable bridges as required to route cables across walkways. If not applicable, the temporary cables shall be protected

with flexible hose, routed through a metal pipe and adequately buried under the ground with appropriate sign posted.

- Always route cables and hoses in an orderly manner. Use cable ramps to prevent trip chances.
- Use cable trays to lay down multiple cables in an orderly fashion.
- Keep cables / hoses as short as possible. Where cable stands or storages are provided must use them to kept rolled excess and unused cables / hoses.
- Hang up cables / hoses and return to the proper storage areas when not in use. Separate / isolate cables from sources when not in use.
- Keep cables clear from water, use palettes and ‘S’ clamps or any other materials to avoid contact with water.
- Check plugs and cables condition.
- Always check the cables and hoses prior to use, for any sign of wear and tear.
- If you find any exposed cable, immediately remove it from site.
- Electrical wires which do not resist atmospheric conditions or of limited electrical information shall not be used.
- All wires shall be insulated to prevent contacts with its supports.
- All pipes and conduits which contain electrical wires shall be provided with appropriate boxes and covers at their ends.
- All electrical wires, installations, tools and appliances shall be of the types which comply with the requirements of the authority concerned.
- Electrical apparatuses shall be appropriate to the atmospheric conditions where they shall be used. They shall be explosion proof while operated in wet, flammable or explosive locations.
- Switches located in or near the entrances of confined spaces shall be distinctive for immediate electricity disconnection in emergencies.
- Exposed empty lamp sockets and broken electrical bulbs shall not be permitted.
- Mobile electrical lamps shall be provided with electrical cables capable of withstanding the severest operating conditions to which they may be exposed. Electrical lamps shall not be mounted by its wires.
- Non-spark-producing lamps of 12 volts shall be used in wet, flammable and explosive locations.
- Portable electrical tools without double insulation shall comply with the specified requirements of the authority concerned and shall be grounded.
- Electrical installations in the worksite shall be protected against damages as a result of over passing persons or equipment. They shall also be protected from sharp edges or suitably raised from ground. Automatic circuit breakers shall be used in the electrical circuits exposed to heavy equipment passage or hammering by metal machines.
- Appropriate clearance distance shall be maintained between electrical cabinets doors and electrical installations. Equipment doors and hinged panels must have at least a 90-degree opening provided in the workplace.
- Persons who are engaged in electrical installations shall wear insulated gloves and other insulated tools or hot line tools used for live lines when it is necessary to work with energized circuits.
- Clearance distance specified by the authority concerned shall be maintained between employees and any exposed live installations.

- Electrical equipment and machines shall be grounded and shall not be connected to electricity before ensuring safe electrical circuit status and enclosed and exposed live installations are appropriately insulated to prevent contact.
- If work nature in the worksite requires a temporary electrical transformer, all procedures specified by the authority concerned on required protection shall be applied provided that the installations shall be in compliance with the electrical volt used.
- All requirements of electrical installation and safety regarding machines, equipment and electrical apparatuses when used in the site shall be applied provided that those requirements shall include the procedures of protection against overloading, earth leakage current and short circuit current.
- NOTE: In case of erection or maintenance of main electrical stations or electrical substations projects, or high voltage cables installations projects, the contractor shall develop and prepare a risk assessment study and detailed action plan before commencing any work, and shall obtain the necessary approvals and no objection certificates from the concerned authorities.
- All the sub-station (pocket substation) shall be fenced and locked off. Provide name of authorized person and entry into such facilities are subject to internal PTW process.
- Keys to all high-risk electrical work areas shall be kept in a secure place to prevent any unauthorized entry. It is the responsibility of responsible person to manage this system and keep the record of all entries.
- All high voltage areas, e.g. High Voltage Substations, and all Low Voltage areas, e.g. Low Voltage Substations, Switch rooms and Equipment rooms etc., shall be kept locked

12.13.5 Work on or Near Live Conductors

- No person shall be engaged in any work activity on or so near any live Conductor without valid PTW from the contractor and assigned person is suitably covered with insulating material so as to prevent Danger) that danger may arise unless:
 - a) It is not reasonably practicable in all the circumstances for it to be dead;
 - b) It is reasonably practicable in all the circumstances for employees to be at work or near it while it is live; and
 - c) Appropriate control measures (including where necessary the provision of appropriate protective equipment) are taken to prevent injury.
- The minimum safety distance from all overhead power lines and live conductors to be observed by the Contractor shall be no less than 5 meters.
- Where the safety distance to overhead power lines or live conductors as stipulated in Applicable Laws is greater than 5 meters, then safety distance stipulated in the Applicable Laws shall be observed.
- The contractor and its subcontractors shall ensure that the appropriate safety distance from all overhead power lines and live conductors is strictly observed by its personnel, particularly in regard to the installation and relocation of scaffolds and cranes, the use of excavators and other machinery, and during material transport and storage.
- The contractor and its subcontractors shall be responsible to ensure that all other requirements of Applicable Laws for working in proximity to overhead power lines and live conductors are fulfilled.
- The contractor and its subcontractors shall be responsible for informing and training its personnel to work in proximity to overhead power lines and live conductors as required by Applicable Laws, and for maintaining such training records at the Site.
- The Employer shall as far as reasonably possible inform the Contractor of electrical risks on the Site and install warning signs and/or other indications.

12.13.6 Earthing or other Appropriate Protection

- Protection shall be taken, either by earthing or by other appropriate means to prevent danger arising when any Conductor (other than a Circuit Conductor) which may reasonably foreseeably become charged as a result of either the use of a system or a fault in a system, become so charged and for the purposes of ensuring compliance with this procedure, a conductor shall be regarded as earthed when it is connected to the general mass of earth by Conductors of appropriate strength and current-carrying capability to discharge electric energy to earth.
- All non-current carrying metal parts of portable equipment and fixed equipment, including their associated enclosure, and supporting structures shall be earthed.
- The path to earth from circuit, equipment and enclosures shall be permanent, continuous and effective.
- The circuit wiring shall be including or provide an equipment earthing conductor to which the earthing contacts of the receptacle or cord connector shall be connected.
- The earthing of receptacles and cords connectors shall be grounded by connection to the equipment earthing conductor of the circuit supplying the receptacle or cord connector.
- A conductor used as an earthing conductor shall be identifiable and distinguishable from all other conductors.
- No earthing conductor may be attached to any terminal or lead so as to reverse designated polarity.
- Earthing conductor shall be inspected regularly.
- Where used in construction (or activities with similar hazards, including certain maintenance, remodeling or repair activities where there is a likelihood of damage to portable cords, wet locations or equipment and wiring that is frequently re-arranged) all receptacle outlets that are not part of the permanent wiring of the building or structure and that are in use by personnel shall, so far as is reasonable practicable, have earth - fault circuit – protection via RCD and power supply.
- Megger-testing shall be conducted and recorded periodically and/or change in location.

12.13.7 Site Lighting

- The contractor will provide the general lighting of the Site access points, the Site roads, common pedestrian access and escape routes and the Site parking area.
- The subcontractor shall be responsible for providing adequate lighting in and around its work areas and Site facilities.

12.13.8 Power Tools and Equipment

- a) The contractor and its subcontractors shall be responsible to ensure that electric tools and machines used within its scope of works comply with Applicable Laws.
- b) Priority shall be given to using low voltage (<50 V) or battery-operated lighting, tools, equipment and machines when the work is going on the confined spaces.
- c) Where tools and equipment require a supply of 220V AC or above, it shall be double insulated and the residual current device (RCD) shall be provided by the contractor and connected into the circuit. The RCD be checked in compliance with Applicable Laws and site regulations.
- d) Where the risk of electrocution of personnel or the electrification of Site installations exists by nature of the work area i.e. work in confined spaces or the scope of works the contractor and its subcontractors shall provide:
 - Safety extra-low voltage (SELV) lighting, or;
 - Protective extra-low-voltage (PELV) lighting, and;
 - Where appropriate additional electrical protection such as a residual current device (RCD).

- e) The contractor and its subcontractors shall be responsible for informing and training its personnel to work with electrical tools and machines as required by Applicable Laws, and for maintaining such training records at the Site.

12.14 Manual Handling

The contractor and its subcontractors are responsible to reduce the risk and injuries of manual handling by using the following hierarchical process: -

- a) Elimination: -
 - Eliminate the manual handling activity.
 - Reduce carrying distance and provide safe access.
 - Avoid repetitive handling.
 - Ensure workflow is designed efficiently to eliminate unnecessary steps or human effort.
- b) Substitution: -
 - Reduce the amount of twisting and stooping.
 - Introduce adjustable height surfaces.
 - Ensure work is positioned so hands are working just below elbow height with elbows close to body and shoulders relaxed.
 - Minimize weight of object by reducing packing size.
- c) Engineering control: -
 - Provide good Ventilation.
 - Provide mechanized tools for handling (hoists, trolleys, conveyors, wheelbarrows, etc.)
 - Regulate temperature as possible.
 - Appropriate positioning of lighting in the working places.
- d) Administrative Control: -
 - Conducting Manual handling training.
 - Ensure regular housekeeping is undertaken to reduce clutter and remove obstructions (trip/slip hazards) from walkways.
 - Team handling, teams should be trained together with participants of a similar size and strength.
 - Set reasonable work rates and ensure adequate opportunity for brief rest breaks.
 - Use safety signage and information about weights on loads.
- e) Personal Protective Equipment: -
 - Ensure providing suitable and adequate PPEs for the manual handling.

12.15 Lay-Down and Storage areas

- a) Material and Equipment Storage is not permitted in any area without the express authorization of the contractor.
- b) The contractor will allocate lay down and storage areas to for the storage of materials and equipment.
- c) These areas shall be considered to be part of the contractor's work area and thus will be under the responsibility of the contractor.

12.16 Installation of Ancillary Construction Equipment

- a) The installation of ancillary construction equipment and other mechanisms such as scaffolds, cranes, pipe supports, pipe holding devices, auxiliary structures for erection, etc., are subject to these Site Regulations and prior approval by the contractor.
- b) The contractor and its subcontractors shall be responsible to ensure that any device of this nature is correctly installed, in accordance with Applicable Laws and standards.

- c) The equipment shall in no way create additional risks to Site personnel, nor damage or unduly stress any other structure or installation, nor unreasonably impedes any other contractor.
- d) Any additional safety measures required for emergency access and the like in relation to ancillary construction equipment are to be provided and borne by the contractor and its subcontractors.

12.17 Traffic Control

- a) The contractor and its subcontractors shall be responsible to control entering and leaving the site with vehicles.
- b) The contractor and its subcontractors shall ensure that pedestrian circulation shall have priority over vehicle circulation. So, safe and separated walkways for Pedestrian shall be provided far from vehicles routes.
- c) The contractor and its subcontractors shall be responsible to control the vehicle traffic on site, and for that purpose, the contractor establishes speed limit for motor vehicle in site that is 20 km/h and provide signs on site for this limit and then take disciplinary actions against any violations.
- d) The contractor and its subcontractors shall be responsible to ensure that vehicles that are to be used within the site must be fitted with both visual (e.g. flashing yellow or orange beacons) and audible warning devices for reversing.
- e) The contractor and its subcontractors shall be responsible to ensure that nobody operate any vehicle on the project Site unless the person is the holder of a current driver's license for the vehicle regarding applicable law and the person has been issued with written authorization which specifies the particular type of equipment he/she is authorized to operate.
- f) The contractor and its subcontractors shall be responsible to provide an organized parking area for light vehicles.
- g) The contractor shall be responsible to inspect all heavy equipment and site vehicles before first entry to site and at quarterly intervals.
- h) All supplies (materials, equipment and tools, etc.) transported to the site shall be clearly and visibly marked with the contractor's name and be accompanied by appropriate documents, certificates and verifications according to Applicable Laws.
- i) The contractor shall consider the planning of delivery timing during the off-beak hours.
- j) The contractor shall avoid the stopping on the main roads, or undesignated areas.
- k) The contractor shall follow the safety instructions of and road signs.

12.18 Signs and Warning

- a) HSE signage shall comply with the Applicable Laws and standards and five star procedures.
- b) The contractor/subcontractor shall be responsible for attaining the approval from Competent Authorities to erect advertising sign boards, posters or banners where this is required by Applicable Laws.
- c) The contractor shall comply with the employer's labeling system for the electrical connections, valves and pipelines.

12.19 Lightning Protection

- a) The contractor and its subcontractors shall protect any structure under its responsibility and/or construction equipment against the risk of electrification by lightning strikes by a dedicated and verified earth connection and/or any other means according to Applicable Laws.

12.20 Working with Pressurized Equipment and Tools

- During construction activities the variable types of Pressurized equipment and tools will be used. There are many potential hazards associated with the use of the Pressurized equipment and tools due to:

- a. Inappropriate air pressure.
- b. Excessive noise
- c. Oil and Air Quality
- d. Air Temperature
- e. Shock Potential
- f. Whipping Hose Danger
- g. Eye Protection
- The contractor and its subcontractor to follow the following while using Pressurized equipment and tools powered by compressed air:
 - a. Ensuring that all equipment and tools had been inspected and approved by the authorized Contractor representative before using.
 - b. Ensuring that all safety devices are installed and maintained.
 - c. Ensure calibrated gauges are installed for torquing activity.
 - d. Ensuring that the equipment operators are competent and trained for the safe operating and using of these equipment and tools.
 - e. Pressurized equipment and tools must be checked to ensure that they are short wire or positive locking device attaching the air hose to the tool must also be used and will serve as an added safeguard.
 - f. If an air hose is more than 1/2-inch in diameter, a safety excess flow valve must be installed at the source of the air supply to shut off the air automatically in case the hose break.
 - g. When using Pressurized equipment and tools, a safety clip or retainer must be installed to prevent attachments such as chisels on a chipping hammer from being ejected during tool operation.
 - h. Pressurized equipment and tools that shoot nails, rivets, staples, or similar fasteners and operate at pressures more than 100 pounds per square inch, must be equipped with a special device to keep fasteners from being ejected, unless the muzzle is pressed against the work surface.
 - i. Airless spray guns that atomize paints and fluids at pressures of 1,000 pounds or more per square inch must be equipped with automatic or visible manual safety devices that will prevent pulling the trigger until the safety device is manually released.
 - j. Screens must be set up to protect nearby workers from being struck by flying fragments around chippers, riveting guns, staplers, or air drills.
 - k. Compressed air guns should never be pointed toward anyone. Workers should never “dead-end” them against themselves or anyone else.
 - l. Appropriate PPE (Personal Protective Equipment) must be worn for employees working with Pressurized equipment and tools. Eye and ear protection in specific.

13.0 Behavioral Safety

13.1 HSE Incentive Scheme

- a) Health, Safety and Environment incentive scheme will be promoted by the contractor to encourage all site personnel to achieve the HSE objectives. The best HSE performance will be awarded during the monthly HSE committee meeting.
- b) The site contractor will communicate the details of the Health, Safety and Environment incentive scheme in a separate announcement at the site.
- c) The contractors and its Subcontractors personnel shall provide all reasonable support and cooperation for Health, Safety and Environment incentive scheme.

13.2 Personal Behavior

- a) The contractor's and its subcontractors' personnel employed on the site must be professionally qualified for the duties assigned to them and are in a state of health to perform their tasks (work) without adverse risk to its or others health.

- b) contractor has the right to sight and confirm the qualifications of all Site personnel, which shall be immediately presented in original form on request.
- c) The employees of the contractor are obliged to be respectful and co-operative with the personnel of other subcontractors.
- d) The contractor or its subcontractors' personnel who breach Applicable Laws or do not obey the instructions issued by the site management shall be liable to disciplinary action.
- e) The contractor shall as far as reasonably practicable ensure its Subcontractors and its personnel do not enter Site areas that are unrelated to the contractor's scope of works.
- f) The contractor's personnel shall not enter or use the site facilities, workshops and storage areas of other contractors without authorization.
- g) The contractor's personnel shall not use the construction equipment i.e., scaffolding, cranes, tools, machines and the like, of other contractors without specific approval.
- h) The individual disciplinary actions will be applied in accordance with the project Zero Tolerance rules (clause no. 2.2)

14.0 Construction Environmental Management Plan

14.1 Environmental Impact Assessment and Prevention

- a) The contractor and its subcontractors Risk assessments must contain, where applicable, assessments of the environmental impacts including but not limited to:
 - Oil and other petroleum products (including from vehicles and machines).
 - Paints and coatings.
 - Chemical based products and compounds.
 - Waste material – wood, plastic, carton, packing, empty containers, metals, etc.
 - Cement products, etc.
 - Man-made-mineral fibers.
 - Noise.
 - Dust.
 - Exhaust gases/emissions.
- b) The assessment of potential environmental impact risks shall consider as a minimum the following risks:
 - Spills, discharges and/or other contamination of land, water and/or the atmosphere.
 - Noise and vibration emission levels.
 - Dust generation.
 - Light pollution during the night.
 - Natural heritage and wildlife conservation.
 - Ozone depleting and greenhouse gases.
 - Accumulation of stagnant water.
- c) Appropriate control measures, shall be identified and recorded for each environmental impact risk, these may include but not limited to;
 - Replacement of high-risk products or processes with a non-risk or lower risk products or processes.
 - Secondary containment/retention devices in case of a spill or leak.
 - Designated storage areas.
 - Specific storage, handling and transport procedures in accordance with the MSDS.
 - Waste separation, disposal and removal procedures.
 - Noise and vibration reduction/suppression procedures and devices.

- Dust reduction and suppression procedures.
- Light pollution prevented through screening, effective programming of work, and directional lighting and the type of light used, etc.
- Awareness and application of local restrictions and regulations for the protection of natural heritage and wildlife.
- Removal and/or treatment of standing water and keep the Site clean to prevent insects and vermin breeding.

14.2 Dust Control

- a) The contractor shall develop a specific plan for the Dust monitoring and control. This plan explains the contractor and its subcontractor methodology for dust monitoring and control. And briefly the following will be implemented:
- Daily (three times) visual checks will be carried out and recorded by the HSE officer to determine the current level of dust in air and their source and to define whether additional control or protective measures are required to be taken.
 - Dust particles such TSP, PM10 and PM2.5 may be measured by a third parties approved by Contractor if required.
 - The contractor will keep all monitoring records, and it's available upon request.

14.3 Noise Control

- a) The contractor shall develop a specific plan for the Noise monitoring and control. This plan explains the contractor methodology for Noise monitoring and control. And briefly the following will be implemented:
- Weekly measurements will be carried out to assess the noise levels adjacent to the Site and to verify compliance with the legal requirements.
 - Activities generating high noise levels will be assessed upon commencement to verify sufficiency of the noise control measures taken.
 - The contractor will keep all monitoring records, and it's available upon request.

14.4 Emergency Response to Environmental Incidents

- a) The contractor and its subcontractor shall provide an emergency response plan for potential environmental incidents involving dangerous goods or products, related to the Contractor's scope of works that sets-out:
- First-aid treatment – refer to the MSDS for the product for treating persons contaminated with the product.
 - Containment – how to contain the pollution at its source and prevent further spread.
 - Notification procedure – whom to inform of the incident; this may include the Site Management, HSE manager, the Contractor and other subcontractor's personnel nearby, Competent Authorities and clean-up specialists. The names and contact details for each shall be listed.
 - Evaluate – in consultation with the Site Management and Competent Authorities evaluation of significance of incident and formulation of the initial response.
 - Clean up – how to deal with the clean-up and disposing of the waste in accordance with Applicable Laws and regulations.
 - Investigate and report all environmental incidents shall be reported to the Site Management.
 - Personnel shall be trained on how to use the plan and equipment such as spill kits.

14.5 Storage and Handling of Hazardous Substances

- a) Dangerous goods and products refer to, but is not limited to; oil and other petroleum products, paints and coatings, gasses, solvents and thinners, other chemical based products and compounds, cement and lime-based products, man-made-mineral fibers, etc., that have a potential to cause harm.
- b) The Contractor shall comply with all Applicable Laws, regulations, MSDS and the manufacturer's instructions for the storage and handling of all dangerous goods and products.
- c) The subcontractors must notify the contractor prior to bringing hazardous substances to Site this must occur at least 48 hours prior to delivery; this notification must include the MSDS, the expected volume to be stored, and its location. This will be further defined through Site Instruction.
- d) A copy of the MSDS, provided by the supplier/manufacturer of the product, shall be readily available for each product at the storage and handling area/s. Copies shall also be available at the Contractor's offices on Site and the Site first-aid facility.
- e) International pictogram signage and labelling is required on all tanks, containers, vessels and receptacles.
- f) Dangerous goods and products shall only be stored in the containers or receptacles in which they were supplied or that have been specifically designed for the purpose.
- g) Filling and decanting procedures shall be clearly visible.
- h) Emergency spill kit's, suitable for the type and volume of the product, shall be immediately available at the storage area.
- i) Dangerous goods and products shall not be stored in the following locations:
 - Where there is a risk of damage from impact or collision from Site traffic.
 - Within 50 meters of a spring, well or borehole.
 - Within 10 meters of a watercourse, ditch or drainage channel.
 - Where a spilt product could enter the drainage system or loose-fitting manhole covers, or soak into the ground and enter the water table.
 - On a roof.
 - In areas at risk of flooding.
- j) Fixed position tanks (I.e. those remaining in one place for a long duration) of significant weight and volume shall be installed on an impermeable hard base such as a concrete slab with a retention bund wall with a total retention capacity of no less than 110% of the volume of the tank. Installation of such facilities must be approved by the Site Management prior to installation.
- k) Individual storage tanks must be either double skinned, have an integral retention capability or be stored within a bounded area with a total retention capacity of no less than 110% of the volume of the tank.
- l) Storage areas of multiple tanks and containers shall have a total secondary containment or retention capacity of no less than 100% of the volume of largest container + 25% of the total volume of the remaining containers. Installation of such facilities must be approved by the Site Management prior to installation.
- m) Intermediate Bulk Containers (IBC) without integral retention capability shall be stored within a secondary containment/retention area of suitable capacity.
- n) When not in use all hoses connections and nozzles must be stored within the secondary containment or retention area.
- o) These conditions shall apply to permanent, temporary and transportable/mobile storage facilities.
- p) The Site management establishes a specific plan for Hazardous substances to explain the methodology of controlling of hazardous Substances and its wastes.

14.6 Waste Management Procedure

- a) The Waste management plan has immediate effect until the end of the project and continuous review will be conducted in accordance with all changes in regards to generated waste streams and hazardous waste produced.
- b) Contractor and its subcontractor shall comply with this plan both in on-site activities and in selection of products and packaging, apply the management of waste hierarchy **Avoid, Reduce, Reuse, Recycle and Disposal**.
- c) That sufficient numbers of bins and/or containers are provided for the appropriate collection of waste and rubbish and all wastes generated on site will be disposed in accordance to applicable laws.
- d) Contractor shall allocate waste area for its scope of work wastes and shall comply with applicable laws.
- e) The contractor shall have an agreement with local authorities to collect and dispose the site wastes. These agreements shall include the hazardous wastes transfer and disposal.
- f) Contractor and its subcontractor shall ensure that all non-hazardous wastes will not be let on site more than 72 hrs., and conduct regular collections and removals and additional collections if required.
- g) Each waste container used for collection and removal of waste shall be constructed of metal or plastic, water-tight and rodent-proof, clearly labelled/colored according to its content and not be filled above more than 90 % of their capacity.
- Contractor and its subcontractor shall consider Waste types, collection details and preferred disposal method in non-hazardous & Hazardous waste disposal process.
- Contractor and its subcontractor shall mitigate and prevent any risks regarding waste management such as, but not limited, spillage, fire, chemical explosion and health risks and introduce these risks in risk assessment for conduction its control measures.
- h) Contractor and its subcontractor shall provide warning signs, labels and lock for the hazardous waste area to prevent unauthorized entry.

15.0 Occupational Health Program

15.1 Noise and Hearing Protection

- a) Protection against the effects of noise exposure shall be provided when the sound levels exceed 85 db.
- b) When employees are subjected to sound exceeding the level mentioned above the contractor and its subcontractors shall implement a feasible administrative or engineering controls.
- c) If such controls fail to reduce sound levels within the levels, personal protective equipment (Hearing protection devices) shall be provided and used to reduce sound levels within the levels.
- d) The contractor and its subcontractors shall provide the employees by the required trainings for the hearing protection.
- e) Isolation procedures shall be applied for the highly noise equipment shuck as (enclosures) to reduce the noise levels.
- f) Rotating of employees to reduce the exposure time in accordance with the noise level.
- g) Periodical examinations shall be conducted as per the local applicable laws.

15.2 Working During Extreme Weather Conditions

- a) The Contractor and its subcontractors shall be responsible to take all reasonable measures to ensure the protection of the health and the safety of all its personnel on Site during extremely hot and cold weather conditions.
- b) The contractor shall put the following procedures in place to inform them of potential risks associated with extreme weather conditions and provide guidance on prevention measures against harm to Site personnel:

- The contractor will inform all Site personnel of the weather risk level each day by posting weather warnings on the Site notice board/s.
- The information will be represented by a 4-color code: GREEN, YELLOW, ORANGE AND RED
- This information will be established using daily weather forecasts and alerts provided to the contractor by local meteorological authorities.
- The color-coded warning posted shall consider the highest risk level that can be expected from the available information.
- In cases where the risk level changes, the contractor will take all reasonable steps to communicate that information.
- Where the Project is affected by any other significant weather conditions, such as high winds, storms, etc., the contractor will take any reasonable action to ensure the protection of Site personnel, the environment, material resources from harm.

Working in Hot Weather

- a) The risk levels for working during hot weather take into consideration the outside temperature (measured in the shade) and the humidity level.
- b) Any measure implemented to fight against heat shall not compromise any other measures already in place to ensure individual and collective safety of the personnel on the Site.
- c) The color-coded warning indicates the potential risks to the health and safety of workers during hot weather and suggested prevention measures as follows:
 - i. **GREEN** (1) indicates that there is no particular weather-related risk; however, the Contractor shall ensure its workers have access to fresh drinking water in the immediate working area.
 - ii. **YELLOW** (2) indicates that climatic conditions can contribute to the risk of physical exhaustion, cramps and sunburn. In addition to the GREEN measures, the Contractor shall provide adapted PPE, sunscreen and allow its and its Subcontractors' personnel to have regular breaks in shaded and/or air-conditioned areas.
 - iii. **ORANGE** (3) indicates an increase of the risks which could lead to heat exhaustion. In addition to the GREEN and YELLOW measures, the Contractor shall consider adapting the working hours in order to avoid the hottest hours of the day.
 - iv. **RED** (4) indicates that working conditions could have a vital and a long-term impact on workers' health (dehydration, burns, heat exhaustion). Therefore, while still observing all of the above-mentioned measures, the Contractor's and its Subcontractors workers should avoid prolonged physical activity and/or exposure to the sun.

15.3 Back Injuries Prevention

15.3.1 Back Disorders

- a) Factors Associated with Back Disorders. Back disorders result from exceeding the capability of the muscles, tendons, discs, or the cumulative effect of several contributors:
 - Reaching while lifting.
 - Poor posture--how one sits or stands.
 - Stressful living and working activities--staying in one position for too long.
 - Bad body mechanics--how one lifts, pushes, pulls, or carries objects.
 - Poor physical condition-losing the strength and endurance to perform physical tasks without strain.
 - Poor design of job or work station.
 - Repetitive lifting of awkward items, equipment, or (in health-care facilities) patients.
 - Twisting while lifting.

- Bending while lifting.
 - Maintaining bent postures.
 - Heavy lifting.
 - Fatigue.
 - Poor footing such as slippery floors, or constrained posture.
 - Lifting with forceful movement.
 - Vibration, such as with lift truck drivers, delivery drivers, etc.
- b) Signs and symptoms include pain when attempting to assume normal posture, decreased mobility, and pain when standing or rising from a seated position.

15.3.2 Prevention and Control

Alter the task to eliminate the hazardous motion and/or change the position of the object in relation to the employee's body -- such as adjusting the height of a pallet or shelf.

- a) Material handling tasks should be designed to minimize the weight, range of motion, and frequency of the activity.
- b) Work methods and stations should be designed to minimize the distance between the person and the object being handled.
- c) Platforms and conveyors should be built at about waist height to minimize awkward postures. Conveyors or carts should be used for horizontal motion whenever possible. Reduce the size or weight of the object(s) lifted.
- d) High-strength push-pull requirements are undesirable, but pushing is better than pulling. Material handling equipment should be easy to move, with handles that can be easily grasped in an upright posture.
- e) Workbench or workstation configurations can force people to bend over. Corrections should emphasize adjustments necessary for the employee to remain in a relaxed upright stance or fully supported, seated posture. Bending the upper body and spine to reach into a bin or container is highly undesirable. The bins should be elevated, tilted or equipped with collapsible sides to improve access.
- f) Repetitive or sustained twisting, stretching, or leaning to one side are undesirable. Corrections could include repositioning bins and moving employees closer to parts and conveyors.
- g) Store heavy objects at waist level.
- h) Provide lift-assist devices, and lift tables.
- i) Training should include general principles of ergonomics, recognition of hazards and injuries, procedures for reporting hazardous conditions, and methods and procedures for early reporting of injuries. Additionally, job specific training should be given on safe work practices, hazards, and controls.
- j) Rotating of employees, providing a short break every hour, or using a two-person lift may be helpful.
- k) Rotation is not simply a different job, but must be a job that utilizes a completely different muscle group from the ones that have been over-exerted.
- l) Standing for extended periods places excessive stress on the back and legs. Solutions include a footrest or rail, resilient floor mats, height-adjustable chairs or stools, and opportunities for the employee to change position.
- m) Where employees are seated the chairs or stools must be properly chosen.
- n) Proper adjustable lumbar support may be provided.
- o) Static seated postures with bending or reaching should be avoided.

15.3.3 Office Safety

- a. The contractor and its subcontractors shall implement the following control measure to ensure the safe working environment in the offices:
 - Cords shall be well isolated and covered by ducts to avoid the tripping hazard.
 - Materials such as boxes shall be stacked no higher than 18 inches beneath a sprinkler to ensure the sprinkler's effectiveness.
 - Boxes shall not block an exit path.
 - Never leave file cabinets open and unattended; someone could trip over or bump into them.
 - Paper cutters should be guarded and closed when not in use.
 - All food should be properly stored; studies show 400 times more germs are present on a desktop than on the average toilet seat.
 - Keyboards should be adjustable to improve comfort and reduce strain.
 - Electrical hazards are one of the leading causes of office fires; never overload an outlet.
 - Keep papers clear from devices such as hot plates, and never leave them on while out of the office.
 - Coffee cups shall have a lid to reduce spills.
 - Chairs should be ergonomic and include arm rests and an adjustable back.
 - Light levels should be suitable for the work task.
 - Taking a 10-minute break for every hour you spend looking at a computer screen, giving your eyes a rest and focusing on things at varying distances.
 - Suitable and adequate firefighting system shall be provided to avoid fire hazards.
 - It shall provide proper maintenance, cleaning and filtration of the ventilation, heating and air conditioning system to avoid the occupational illness.

15.3.4 Training

- a. the Contractor and its subcontractors shall provide information, instruction and health and safety training to users to help them identify risks and safe work practices. When training users, consider explaining:
 - The risks from displays work and the controls you have put in place;
 - How to adjust furniture;
 - How to organize the workplace to avoid awkward or frequently repeated stretching movements;
 - How to clean the screen and mouse;
 - Who to contact for help and to report problems or symptoms.

15.4 Vibration Protection

- a. Protection against the effects of Vibration exposure shall be provided when the vibration levels exceed applicable standards.
- b. When employees are subjected to Vibration exceeding the level mentioned above the contractor and its subcontractors shall implement a feasible administrative or engineering controls which will consider the working time, rotation and hand isolation tools from the vibration sources.
- c. If such controls fail to reduce exceeding levels within the levels, personal protective equipment (Vibration protection devices) shall be provided and used to reduce these levels to applicable levels.
- d. The contractor and its subcontractors shall provide the employees by the required trainings for the vibration protection.
- e. The contractor and its subcontractors shall instruct workers to keep their hands warm and dry, and to not grip a vibrating tool too tightly.
- f. Isolation procedures shall be applied for the highly vibrated equipment such as (Vibration isolators or damping techniques on equipment) to reduce the vibration levels.
- g. Rotating of employees to reduce the exposure time in accordance with the vibration level.

h. Periodical examinations shall be conducted as per the local applicable laws and regulations.

15.5 Non-Ionizing Radiation Protection

- a. Non-ionizing radiation refers to any type of electromagnetic radiation includes lasers, ultraviolet, infrared, microwaves and radio frequency radiation.
- b. The contractor and its subcontractors shall reduce the electromagnetic radiation impacts to applicable levels in accordance to applicable standards.
- c. It is essential to keep unshielded sources at a sufficient distance from personnel so as not to pose a health hazard.
- d. It is essential to reduce the time exposure to electromagnetic waves As Low As Reasonably Practicable (ALARP).

16.0 Supply Chain Procedures

16.1 Subcontractors and Services Providers Prequalification

- a) The contractor shall conduct the prequalification process which include the HSE aspects.
- b) The prequalification process shall be conducted before work commencing in the following:
 - The subcontractor shall fill-out the HSE prequalification questionnaire and send it to the contractor for review and comments.
 - This questionnaire shall include but not limited to; HSE Policy, legal compliance, HSE objectives, HSE Performance for the previous period, training records, internal audits, procurement procedures and incident investigation reports.
 - The contractor shall conduct a physical assessment for the subcontractor against his scope of work.
 - These criteria shall include but not limited to; site induction and training, PPE compliance, control of hazardous substances, Housekeeping, working at heights, Environmental control and site inspections.
- c) The contractor shall select the subcontractors or services providers based on the assessment results.

16.2 Hazardous Substances Management

- a) The contractor shall ensure that all supplied substances are free of the prohibited or carcinogenic items. this will be through reviewing of the materials purchase orders and control of substance entry to the site in accordance with the employer HSE requirements.
- b) The Contractor shall ensure that at no time during the execution of the works shall materials classified under the World Health Organization (WHO) or the International Agency for Research on Cancer (IARC) as carcinogen (e.g. IARC 1, 2a) or possibly carcinogen (e.g. IARC 2b) be brought onto the Project Site.
- c) The contractor shall ensure that handling any new substance or changing the circumstances of the handling, appropriate training has to be given to all persons involved to ensure complete understanding of the handling requirements as well as knowledge of emergency and first aid procedures. Records of this training have to be kept on site.
- d) The contractor shall ensure that all hazardous substances shall be stored according to the manufacturer's requirement (as per MSDS) as well as additional requirements evolving from the respective MSRA such as:
 - Protection from direct sunlight and adverse weather.
 - Provision of firefighting and special first aid equipment.
 - Minimum safety distance to other substances stored in the same area.
 - Protection of the environment, provision of bounded areas
 - Protection from nearby vehicle traffic.
 - Storage in special containers suitable and approved for respective substance.
 - Display of safety and emergency signage and Handling Instructions at storage area.
 - Ventilation of storage rooms.

- All containers and packaging used to store Hazardous Substances have to be properly marked and labelled according to the content.
- e) The contractor shall ensure the disposal of Hazardous Substances or containers used to store them has to be performed according to the requirements of the MSDS and legal regulations and by officially licensed disposal companies.
- f) Contractor shall establish and maintain hazardous substances inventory on site.

16.3 Buy / Rent, Equipment and Tools

- a) As per the above-mentioned procedures for the prequalification and hazardous substance the contractor shall ensure that the rented equipment and tools are free of the prohibited substance and the suppliers are prequalified before commencing the processes after obtaining the employer approval.
- b) The contractor shall consider the safety requirement, precaution, environmental aspect and impacts of the equipment before buying / renting.
- c) In case of unfulfilling the HSE requirements the rented equipment shall be rejected.

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